AUGUST, 1959

Industrial FINISHING

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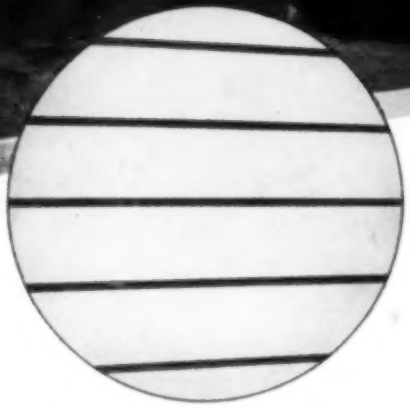
For [redacted] Years The Leading Publication Serving The Finishing Industry

12 YEARS LATER—

STILL NO PAINTING NEEDED!

This picture was taken May, 1959, 12 years after this building was sided with Aluminum Siding finished with *one coat* of Interchemical's POLYMERIN baked enamel.



This close-up photograph of the same building reveals *no damage*. The finish is in *excellent condition!*

Twelve years of sun, snow, wind, rain and industrial smog have failed to mar the beauty of this building, located just blocks from Lake Erie!

This is no accident. POLYMERIN Aluminum Siding Enamels are carefully engineered to last. Either white or the many beautiful pastel shades have excellent color retention—do not chip or peel! When time finally takes its toll by slow erosion, the surface is easily repaintable. No need for paint removers or burning off the old finish.

POLYMERIN enamels are applied by roller coat on continuous aluminum strip and baked for 1 minute at 400°F to 500°F. The strip is subsequently sheared and fabricated, a process which calls for excellent adhesion and flexibility.

If YOUR product must withstand long term outdoor exposure, finish it with POLYMERIN Speed-Bake Enamels.

Interchemical
CORPORATION
Finishes Division

Headquarters Office: 224 McWhorter St., Newark 5, N.J. Factories: Chicago, Ill. • Cincinnati, Ohio • Elizabeth, N.J. • Los Angeles, Cal. • Newark, N. J. • Mexico City, Mex. In Canada, this product is made by Aulcraft Paints Limited, Toronto, Ontario, and sold under its trademark. *Polymerin is a registered trademark of Interchemical Corporation.*

Litho-Strip Corp.
(Job Coating)

Stanley Judd Division
(Drapery Hardware)

Keystone Alloys Co.
(Siding)

Reynolds Aluminum Supply Co.
(Job Coating)

Trane Company
(Baseboard Heating)

Comaco, Inc.
(Job Coating)

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(Awnings)

Crown Mfg. Co.
(Siding)

Stanley Steel Strapping Division
(Seal Fasteners)

FOR SUCCESSFUL STRIP COATING . . . it's *GASWAY*

OVER 70 LINES NOW IN SERVICE THROUGHOUT THE WORLD

This is the pattern of success. *Over 70 strip lines now in service.* These lines are producing properly finished strip efficiently and economically. Gasway is the pioneer in designing, building and installing complete metal strip finishing lines. For nearly 15 years, Gasway has been building and installing complete strip lines that are still producing satisfactorily and economically.

When you select a Gasway installation, you aren't dealing in futures... you're *sure* of the proper design and construction to fit your needs. You save trouble and get into production faster with Gasway. All the trial and error is eliminated. Gasway's long experience has solved the difficult problems involved in strip lines, up to 40" or wider. *This means positive protection of your strip coating investment.*

With Gasway strip lines, you can be sure of success!

- SMOOTH METERED COATING
- UNBELIEVABLE PAINT SAVINGS
- SPEEDS OVER 100 FEET PER MINUTE
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"Judged by its finishes
the MOUNT AIRY Sorbonne Group
is a Double Value"*

Sign of Saleability
A reminder to salesmen and customers of the extra value to be found in Guardsman finished furniture. Available through your manufacturer.

It is the most natural thing in the world for customers to judge furniture by its finish. That's why Mount Airy Mantel and Table Company believes in the value of custom styling as an investment in maximum sales appeal.

Their handsome provincial Sorbonne Group offers two special finishes; warm sepia and antiqued white cameo. Both were created in our studio to make this group a double value.

We like to be known by the customers we keep

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GRAND RAPIDS, MICHIGAN

Grand Rapids Varnish Corporation of North Carolina, High Point, N. C. Makers of the famous Guardsman® finish and Guardsman cleaning polish. Studios in Grand Rapids, High Point, and Hickory.

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Industrial FINISHING

W. H. ROHR, *Editor* P. C. BARDIN, *Associate Editor*

August, 1959
Vol. XXXV, No. 10

BPA

monthly magazine for company executives, production superintendents, process engineers, chemists, purchasing agents, paint shop and finishing department foremen of industrial plants where product surface cleaning and painting are major operations in the manufacture of parts and products of all kinds.

★

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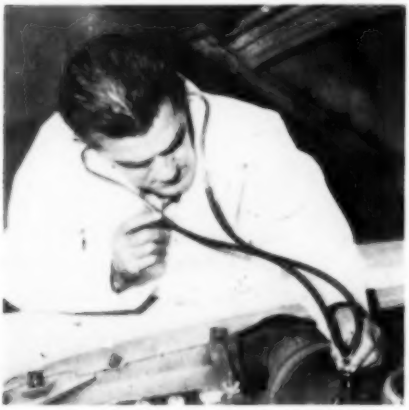
Accepted as Controlled Circulation Publication at Indianapolis, Indiana

35 THIRTY-FIFTH YEAR OF PUBLICATION

Industrial Stethoscope. From diagnosing faults in machines and pipe lines, to testing pressure-tight packages, industry is piling up an almost endless list of uses for the new, low-cost, industrial stethoscope now offered by Edmund Scientific Co.

With this sensitive instrument, mechanics and production workers can



Locates internal trouble in equipment.

detect sounds that would otherwise be inaudible. The faintest knocks, taps, creaks, leaks can be plainly heard. It's useful for detecting and diagnosing mechanical flaws—loose joints, poor bearings and valves, strains, leakage of gas, air or fluid —and many other jobs in industrial maintenance and operating departments of the modern plant.

Protects Your Ears from Noise. "Quiet-Ear," a new ear protector distributed by Bausch & Lomb, has been developed by RCA to meet the need of personnel who work near loud or unpleasant noises.

"Quiet-Ear" doesn't have bulky absorbing materials nor excessively large sealing shells. Applicable any place where noise becomes a hindrance or a nuisance, this lightweight, sanitary and inexpensive ear protector offers excellent noise protection. It can be effectively used in a wide variety of operations.

* * *

Take off Your Coat. A printed sign, in the reception room at Baird Machine Co., Stratford, Conn., says: "We are all doing our best to be comfortable this summer. Divest yourself of your coat and tie if you wish. We do not stand on ceremony here." It was signed by C. F. Johnson, Purchasing Agent.

* * *

Painted Aluminum; Mobile Homes. One company that manufactures mobile homes will use pre-painted aluminum exclusively for the exterior skin of its product.

R. D. Franks, general manager of Supreme-Victor Mobile Homes at Bonham, Texas, says his firm is switching from steel to Colorweld Home Sheet because "we can now offer customers aluminum with an

DOLAN'S 35th YEAR

"Unquestionable Quality" Industrial Finishes

SPEX MULTI-COLOR . . .
Fabulous color blends. Ask for beautiful color card and data.

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Removes *most* finishes *almost immediately!!*

every product manufactured in our own plant

DU-BAR BLEACH . . .
Single application. *Most* powerful. Odorless!!

Every popular type of quality finish, clear or pigmented, including non-yellowing *water-white lacquers* and *sealers. Hot Lacquers, Hi-Solids, Airless Spray, Webbing-Lacquers,* etc. Also *Synthetics,* catalyzed, air-dry or bake. Spray, Roller-Coat, Dip or Flo-Coat. *Stains, fillers, glazes, toners, primers, graining inks,* specialty finishes, etc.

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Manufacturers of "Unquestionable Quality"
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excellent paint finish, at a cost comparable to steel painted in our shop."

Although many mobile homes have aluminum walls and roofs, the use of pre-finished aluminum is a new trend just getting under way, according to Harry E. Weiler, manager of Reynolds truck and trailer markets.

* * *

Furniture Styles. The popularity of Early American styling and the continued use of walnut, highlighted the recent summer furniture markets in Chicago and Grand Rapids. More suites were shown in June than at the January markets. Walnut and cherry were widely shown.

Natural and lighter than natural tones continued to dominate among the finishes, with some increase in darker than natural effects.

Among the style categories, early American represented 22.6% of the groupings, as compared with 18.9% in January. This gain contributed to an increased showing of cherry and to a lesser extent to the walnut total.

Modern-styled groupings accounted for 53.4% of the total showings. In this category an increase in better quality suites was more than offset by a sizeable decline in so-called "commercial" lines.

* * *

Fire-Resistant Fabric. A new fabric, which has earned a better rating for heat and flame resistance than stainless steel, is one answer to the demand for materials that meet the stepped-up requirements of America's "hottest" jet bomber.

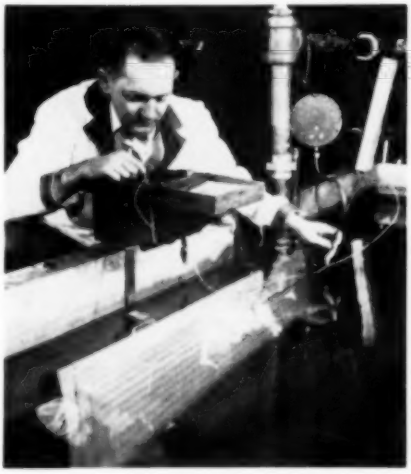
The material—an asbestos-base fabric coated with "Viton" synthetic rubber and reinforced with wire of "Inconel" nickel-chromium alloy—is used for fire wall seals in the swept-back delta wing of the supersonic Convair B-58 "Hustler."—DuPont Co.

* * *

Good Appliance Year. Richard J. Sargent, vice president and general manager of marketing and distribution for the consumer products group of Westinghouse Electric Corp., says "it seems safe to predict that 1959 may be another record year" for the major appliance industry.

At the opening of the Summer Market for furniture and home furnishings in the Merchandise Mart in Chicago, Mr. Sargent said that "for the first five months of 1959, distributor sales to dealers on refrigerators, freezers, electric ranges and home laundry equipment are running 19½% ahead of the same period in 1958.... If we should achieve only a 9% gain for the balance of the year over the same months of last year, we will end 1959 by exceeding the 1956 total."

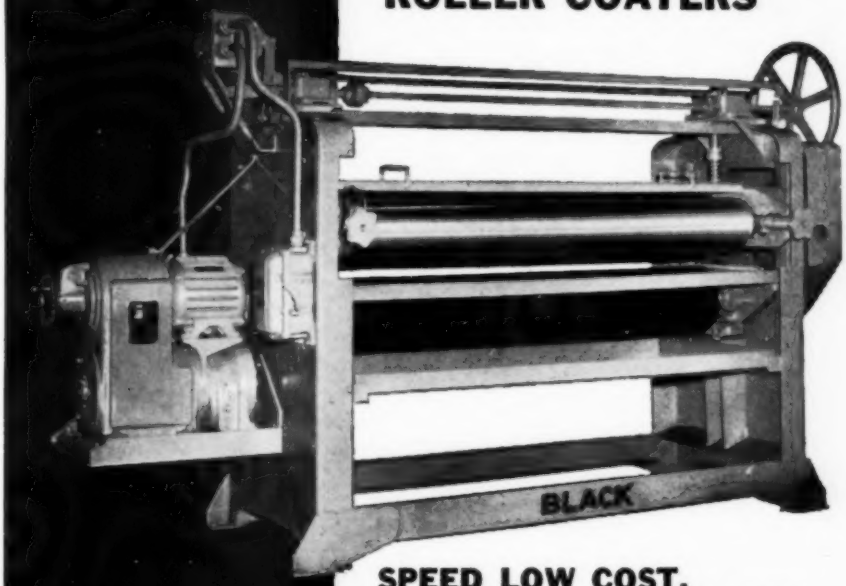
* * *



Howard Easterbrook, laboratory supervisor for Tranter Mfg., Inc., Lansing, Mich., takes careful readings as a Tranter "Multi-Zone" Platecoil heat transfer unit heats up a rinse tank at Ideal Finishing Co., Lansing. Replacing an old-style Platecoil unit, the new unit saved 32 minutes in heating 600 gallons of water from 60° to 200°F.

BLACK BROTHERS

HEAVY-DUTY ROLLER COATERS



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- 21 Standard Sizes From 8" to 122" Wide Capacities
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- Single or Double Coaters
- Patented Safety Control
- Drip-Proof Reservoirs
- Precision Ground Rolls
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Plus many extra-value optional features

SPEED LOW COST, HIGH QUALITY COATING

Whether your finishing needs are intermittent or geared to 24-hour-a-day automation, Black Brothers Roller Coaters can boost your production, reduce down-time, cut coating costs. These are heavy-duty machines, built rugged and rigid to *maintain* high quality production and trouble-free performance. Heavy distortion-free rolls apply *uniform* coatings — assure longer coating roll life. Chrome coated oversize doctor rolls give finer doctoring action.

Versatile, economical — Black's Roller Coaters apply lacquers, paints, sealers, varnishes, waxes, etc. to flat work such as wood, metal, plywood, composition board, hardwood, plastic, cardboard, cement board.

Write today for literature describing the oldest — most complete line of roller coating equipment, available with plus-value optional features to meet *your* finishing needs.

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Mendota I, Illinois — ***SINCE 1882***

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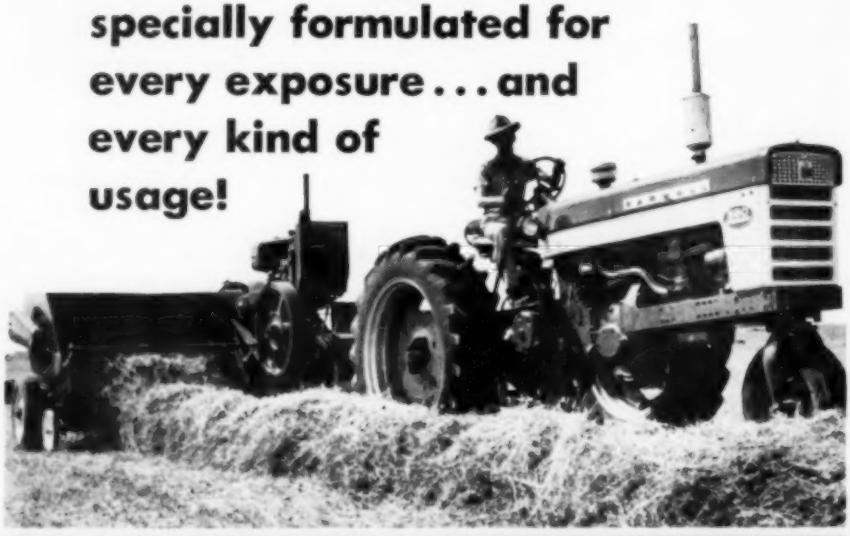
Since ... 1910

Our INDUSTRIAL FINISHES* include the right products specially formulated for every exposure ... and every kind of usage!



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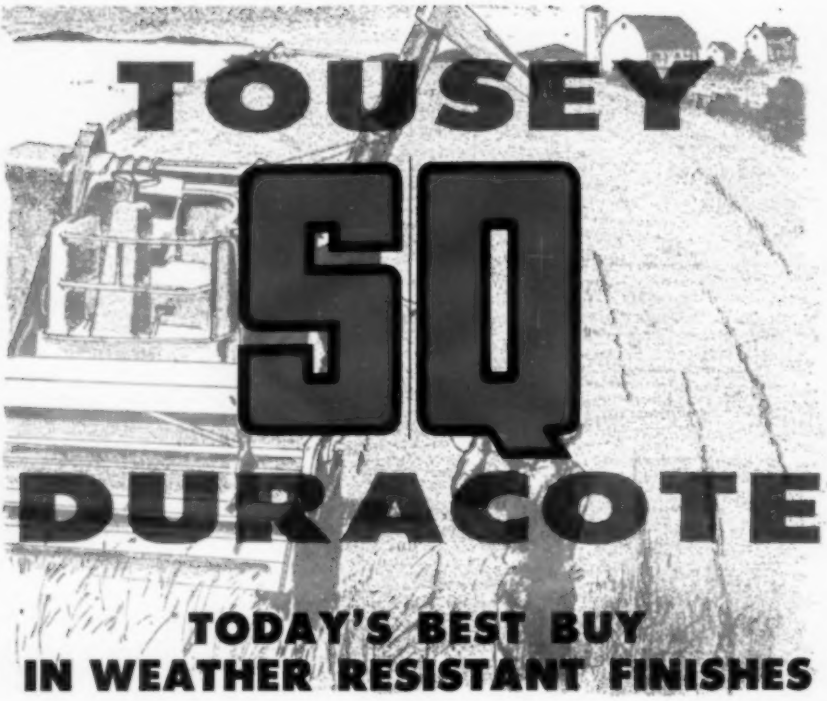

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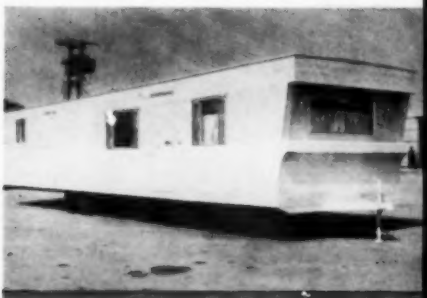

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- 30 to 50% paint savings
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In Canada: 864 Pape Ave., Toronto, Ontario

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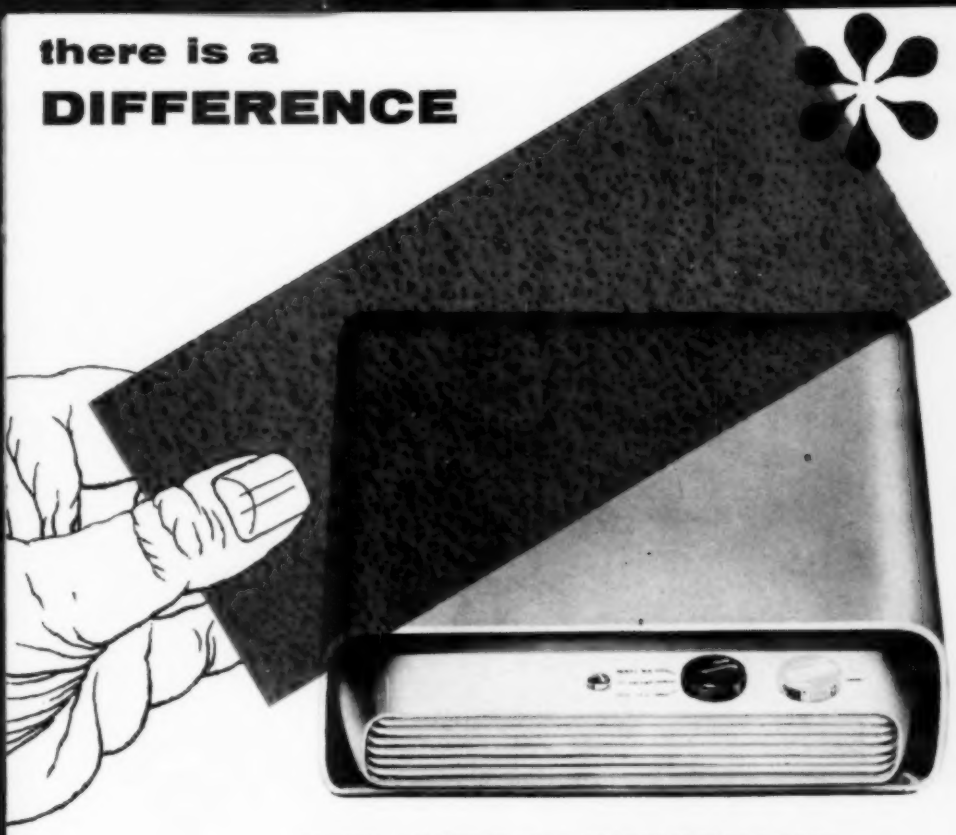

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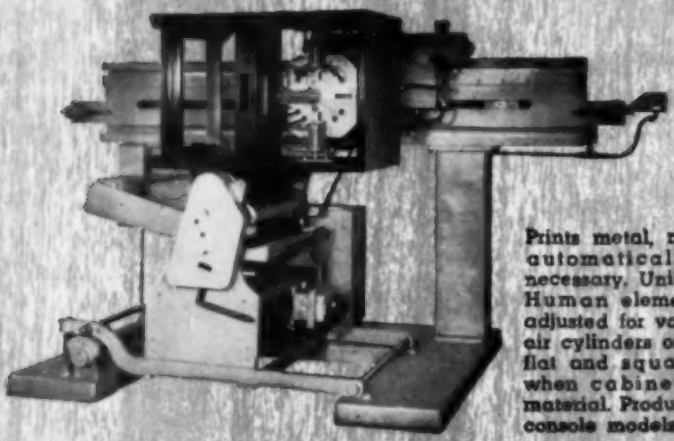


Prints metal, masonite or wood cabin
automatically. No jigs, no fixtur
necessary. Uniform printing, no mispri
Human element eliminated. Quick
adjusted for various sizes. Cabinet held
air cylinders on inside, assuring a perfe
flat and square printing surface ev
when cabinets are made of thinne
material. Production-2 per minute on larg
console models.

Wood

This machine is built in various sizes from the narrowest up to 38" wide, for the graining of various sizes and thicknesses of panels, tables and similar work. Can also be used for edge graining. Explosion-proof motor is mounted beneath a solid base, eliminating fire hazards.

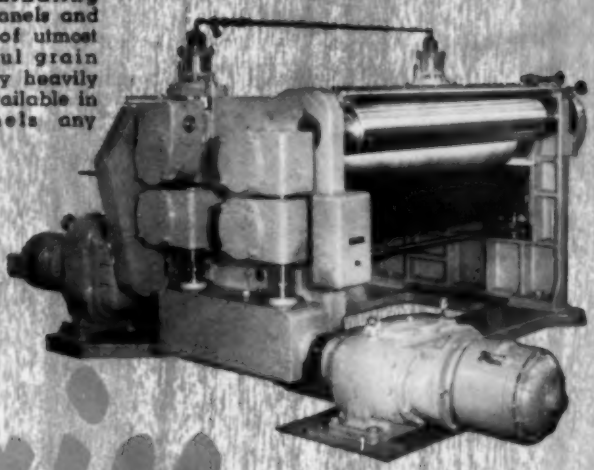
This trademark SCHMUTZ recognized
builders of fine printing machinery sin
1923.

This trademark is known not only in t
country, but throughout the world
modern and highest quality printi
machinery. Now manufacturing more th
60 different types and models.

VISIT OUR PLANT, SEE THE MACHIN
UNDER CONSTRUCTION AND DOI
ACTUAL WORK ON OUR TEST FLOOR.

SCHMUTZ
MFG. CO.
1600 W. MAIN ST.
LOUISVILLE 3, KY.
U. S. A.

verse Roll Coater for eliminating perfections in hardboard panels and her sheet material, which is of utmost portance in securing beautiful grain fects. These machines are very heavily d accurately built and are available in o sizes for 36" and 48" panels any ngth and up to 2" thick.



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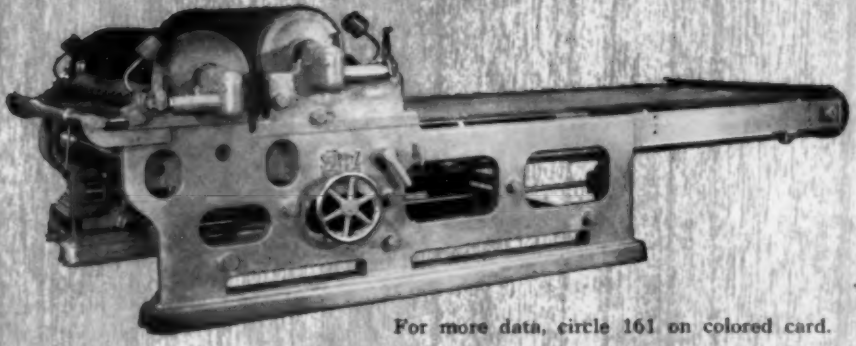

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Every can filled with a full weight of extra high quality 99.75+% Chromic Acid. Prompt delivery made from ample factory and nearby distributor stocks.

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For further information on what manufacturers have to offer —literature, products, supplies, etc., mentioned in the editorial departments, use the "Reader Service" return card in the rear section of this issue, page 116.

FINISHING

August, 1959, Issue

Reader Service Department

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Surface to be completely or partially coated for protection, decoration or for any other purpose, include components and articles made of metals, plastics, woods, and composition materials; also paper, leather, rubber and fabrics.

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1142 N. Meridian Street

Indianapolis 4, Ind.

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Many table manufacturers are using Perfex Satin Finishes to secure that rubbed appearance and waxed feel – without the costly rubbing operation – and while Perfex Satin Finishes are ideally suited to tables, *numerous other pieces of furniture are likewise candidates* for these labor-saving, time-saving finishes.

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Send today for free bulletin. *See for yourself, the many special features of the Binks Wren Air-Brush . . . also a new quiet air compressor. Ask your Binks industrial distributor for Bulletin A59-1R or write direct.*

Ask about our spray painting school. ***Open to all . . . NO TUITION . . . Covers all phases***

Standard Kit
Contains Wren Air-Brush and ¾ oz. color bottle

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Air Compressor
Whisper-quiet, 0.78 cfm clean, dry air @ 30 psi

Wren Air-Brush

Check these outstanding features

light, molded nylon handle
fine air and fluid adjustment
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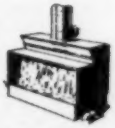
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Exciting Developments in Better Finishing Facilities

Better and faster ways can be found to do high quality finishing by carefully looking over the latest developments in materials, equipment and methods. What to do about competition, colors, people problems, automatic painting, faster bakes, finish uniformity, and special jobs.

By E. A. ZAHN, Finishing Consultant

THE MOST popular beginning remark in any article on industrial finishes usually involves the phrase, "It's all that the customer can see." The remark is true nevertheless and it would be well if more manufacturers respected that truth. The applied paint finish has an obvious selling power which is tremendous compared to some very important, but hidden, mechanized features.

The customer isn't always the housewife who selects on the basis of color, nor the husband who inquires about the quality of the finish, as though he knew something about it. Many if not most of the manufactured products must be sold several times over. Often, the manufacturer never comes into contact with the end user except in handling some serious complaints. An individual must be impressed by what he sees at first glance. He could be a much sought after distributor, a jobber, or just another salesman. How, then, can the important first good impression be made any better than with the applied paint finish?

Is The Painting Department A Bottleneck? Fire Hazard?

This paint finish is much more important than many firms realize. Instead of being pampered in the application care, it is more often treated like an evil necessity. To some, the finishing room is merely the place where production gets held up. It is the place where one reject, out of a special order of 200 units, delays shipment to provoke a favorite customer.

The finishing room, to some, is the place where the insurance inspector determines the high insur-

ance rates for the entire plant. It is also the place where the last big factory fire occurred. It is often known as the place where the operators are forever griping; where unwanted dust settles on the wet finish.

Let us look at the other side of it too. The finishing room also holds the key to future sales success. Take a look at the pieces as they enter the finishing area and then take another good look at the same pieces where they come out of the oven. The first, no one would buy, but the latter holds our future. Why then don't more companies concentrate on improving the finishing area, the finishing methods, the materials and the equipment? This is where the choice labor should be stationed.

Changes in Materials and Facilities Make Economies

It can be said, quite truthfully too, that any finishing area that has not been modernized within the past five years, is expensively out of date. The words, "There must be a better way" are applicable to just about everything we do, but they are much more applicable in the finishing areas.

Many finishing systems, insofar as coating material selection is concerned, are out of date. The same, only more so, is true of much of the finishing equipment presently in use. It may appear to some that few changes are being made in industrial finishing as a business. There have been many little changes though, and these have accumulated so that it is easy to get far behind. For example, if one manufacturer still has a full one hour bake cycle, and a competitor has found a good material that will bake thoroughly in 20 minutes, the one had better get busy and look at his annual fuel bill. The difference between one hour and one half hour baking costs can look mighty nice if they are added to the annual earning statements.

Nothing is ever quite up to the optimum. There is always a better way. This applies to materials as well as to processes.

Competition; Progress; Automatic Machines

Some manufacturers are reluctant to do what a competitor does. We might rather look into the competitor's new methods and then try to improve on them. Paint finishing isn't any different than any other manufacturing specialty. Progress is being made constantly. Today, there are hardly any natural raw materials used in the manufacture of industrial paints. Only a few years ago we mentioned the word "synthetic" with a sneer and added, "It will never take the place of the good old natural resins and oils."

One important area, highly neglected by some concerns, is the application equipment area. This has changed to such an extent that, in some locations, a hand spray operator looks just about as stylish as a man with a paint brush. The paint user trade is leaning heavily toward new, full utilization, automatic painting methods. Many users seem to have such a fear of "complicated mechanisms" that

they refuse to investigate them. Actually, when these so-called complicated machines respond gently to simple push-buttons and simple valves, we wonder why we ever did worry about training special operators for them.

If making progress involves more product uniformity, more durable coatings, more application economy, or more automation, then no competitive business can afford to be without maximum progress.

Color Demand More Sensible; 90% Standard; 10% Special

It is truly amazing to note how many users have a terrible fear of color change in new method equipment; they reject it because they have a fear of the power of color attraction to the trade. There are two things wrong with this kind of thinking. All new facilities are designed to cope with the color change problem. Second, the heyday of the raspberry colored garbage grinder is just about gone anyway. Violent color programs are in reality re-curring fads which usually last about 2½ years and make an appearance in 12-year cycles. They are designed to promote customer interest and just as soon as all of the manufacturing competition has run out of fancy color names, the new literature drops color and replaces it with design feature attractions.

Among the end users there are many today who regret their investment in some outlandish colored commodity, particularly where it must last them for several years. This kind of a customer attitude does not add to the prestige of the manufacturer and it often turns out to be his punishment for trying to tell people what they want rather than asking them first.

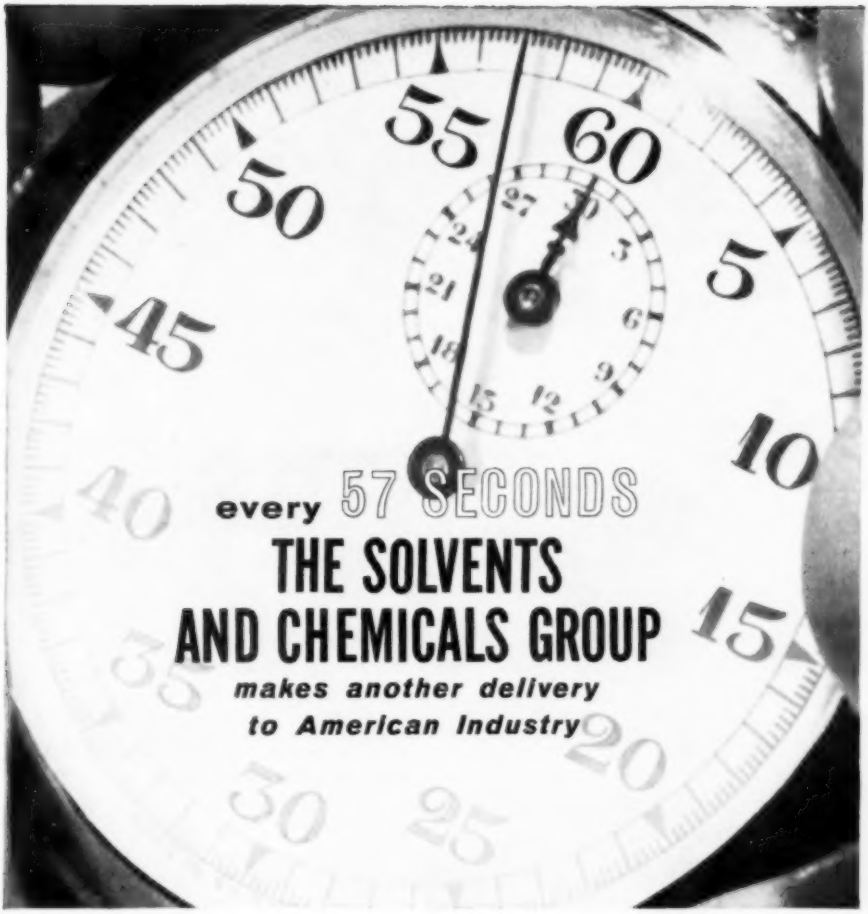
The manufacturer user too often counts the number of colors used in production rather than realizing that one main color may represent as much as 90% of his total production. There isn't a thing wrong with converting the 90% to automatic application and leaving the 10% in the expensive job-shop category. The final answer is to put a premium price on everything except the standard colors. Nearly all manufacturers who fought to promote color are now doing this.

Most Problems are "People"; Pay for Consultant's Service

It has often been said that about 99½% of all of our problems are people, while the other ½% problem is real mechanical and material. It appears that we shouldn't dwell too long on that saying for fear that it may be confirmed too often. There are too many examples indicating that this could be true.

Some method-change prospects have listened carefully to the advice of their respected suppliers and have then purchased consulting advice with the sole purpose of proving the suppliers wrong. When this failed, they proceeded contrarily and lost all possible process advantages. This can be looked upon as a real people problem.

Bad advice is seldom intentionally given by anyone. Good advice is the normal intention with all of us. Our best bet is to abide by the advice of those whose working



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life is devoted to the particular specialty involved. When this is purchased advice, the advisor can no more afford failure than the advised.

More Automatic Painting; Less Wastage of Paint

Within the past ten years, no less than ten new painting processes have been developed. No single one of these ten methods, or any one of the older established methods, will ever suffice for all painting needs. Combined though, it is conceivable that 75% of all industrial painting can be done automatically with almost unbelievable economy. These new painting facilities are not unwieldy monsters but in reality are based entirely on simplicity.

"Trouble with that crackle finish—it won't stop!"

Most of the new process equipment has resulted in the elimination of the paint waste factor entirely. This is no small item either, when we consider that nearly 50% of all purchased industrial paint, not so long ago, was blown out through the exhaust stacks. Perhaps this wouldn't amount to so very much for the small user who buys only four drums of paint a week. Think of the bigger user whose paint bill is a million dollars a year. Yet, half of the cost of these four drums could pay for $20,000 worth of new method equipment in a single year. This should confirm that the smaller user is just as eligible as the bigger user where method modernization is concerned.

Finish Uniformity; Potent Sales Feature

Perhaps the best and most outstanding feature of new process facilities is finished product uniformity. The equipment is automatic and it has numerous adjustable controls. These controls, when properly regulated and adjusted, result in quality and appearance improvement. These improvements are accumulative, whereas in hand operations they certainly are not accumulative.

True enough, each painting method has its process indicators in the final finish. This does not mean though that we should take a representative piece and examine it with a powerful microscope, looking for trouble, unless the same inspection procedure is used on regular production pieces.

Whether the customer is a distributor's purchasing agent or just a wholesaler's contact representative makes no difference. Product finish uniformity is important. Uniformity of appearance, piece to

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piece, and shipment to shipment, can be a most powerful selling feature.

Customers' Impressions and Experiences are Factors

If the final consumer of a manufactured product is not enthusiastically impressed immediately, there would most likely be no sales at all. Imagine a one-coat, hand sprayed finish on a sheet metal porch or lawn chair. There may be perforations, seams, and many hidden inaccessible areas. The metal tubing frame, with weakly sprayed areas is attached by the customer and with great pride in appearance, the chair is placed on his front porch. If this happens on a Saturday night and if it didn't rain before Sunday morning, there is a good chance that rusting will not have occurred.

A much more proper procedure would be to use one of the controlled application methods of painting. . . . The product would look uniformly better and could conceivably last for at least two seasons in any kind of weather conditions. Which then would you buy for your own use? It shows intelligence and common sense when a customer recognizes these advantages.

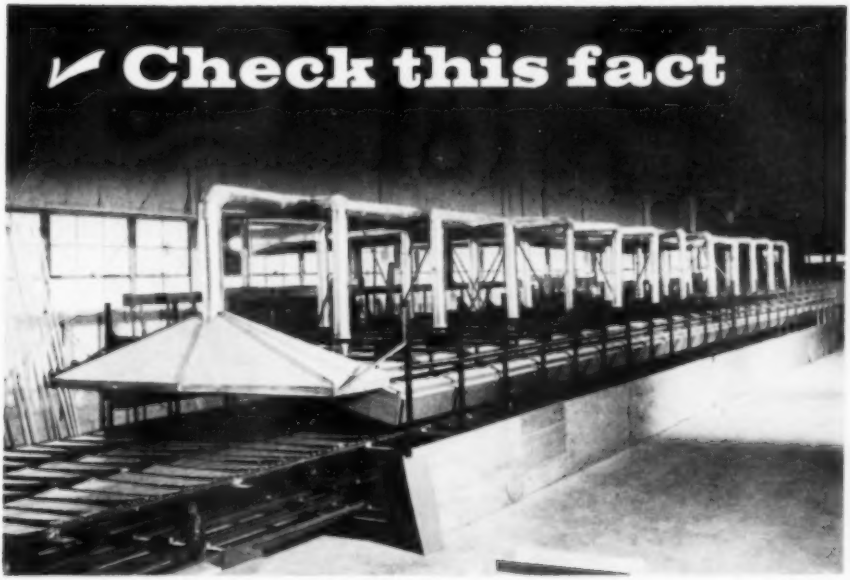
Another worthwhile example, but where the end user is not primarily involved, is in the finishing of piano castings. In the uprights, the customer sometimes doesn't even know that there is a casting involved, and it can possibly be supplied to the piano builder with a rough finish on the top end of one side. But with the grand piano or the concert grand, it is a different story. The piano builder is the casting customer. According to tradition, this must look like gold—not simply rough cast gold but polished gold. Yet, the finish plays no other part except to help impress the end user and justify the high selling price.

Washing and Painting Metal In One Operation

This question of washing with paint has come up many times. Almost as often, it has been laughed down, either by the paint supplier or by the equipment builder. Yet, more than one manufacturer is enjoying production painting prosperity and at the same time producing a superior finished product.

The fabrication metal, in this instance, is hot rolled steel. It is not oiled as delivered and is not oiled in fabrication. It is brake formed and welded by arc. A quantity of factory dirt, welding bloom, and welding spatter is on the surface. The parts are simply loaded onto the conveyor and pass through a modern, bottom-nozzle flow-coater where they are washed thoroughly with paint, vapor leveled, and baked. The paint is under constant power filtration. The end product finish is completely free of dirt and has a uniformly attractive appearance.

Applications such as the one just mentioned can replace quite a number of complicated, semi-hand operated systems to a great advantage to the user. It is chiefly applicable in the category of metal building materials which are



84-ft. **driQuik** Infra-Red Oven turns out as much work at National Homes Corp. as a 350-ft. convection oven

It is significant that National Homes Corp., "the world's largest producer of quality homes," chose driQuik ceramic type infra-red ovens for baking finishes on its new Viking aluminum homes . . . for baking high temperature synthetic enamels on aluminum shingles, roofs, side walls, and siding . . . for bonding the components of the aluminum "sandwich-type" wall panels by activating special adhesives with infra-red heat at the correct temperature.

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jobbed to the building trades with a weathering prime coat only. The prime coat becomes the selling finish and must be of good weathering quality.

Painting Ornamental Iron

Considering the shapes and sizes of the parts, the spray finishing of ornamental iron would be much like straining the paint through a coarse screen and saving the sediment. Utilization efficiency as low as 15% is quite evident. Worse than that, unless the spray gun, hand or automatic, is directed from all conceivable angles, the product will not be protected with a continuous film of paint.

Many such manufacturers feel that their production volume of such ware is too small to accommodate any form of automatic equipment. It would be a good idea to keep in mind, though, that such installations are not eating when they are not running. They are hungry, but for work only.

Decorative Finishes and Automatic Painting

There are numerous designs in manufactured products which cannot be completely painted by the painting methods presently in use. Some of the newer processes cannot accommodate certain decorative finishes. From a suitable material standpoint, the change could easily be made, but the trade demands are deep seated and represent a block to further progress. Air moving equipment such as air diffusers and ventilators are a good example. The user trade and the manufacturers' complaint de-

"This is going to spoil me for other women."

partments must continue to suffer until some more courageous manufacturer is willing to gamble that finish quality improvement is more important than metallescent finishes, for example.

Cost of a Gallon of Paint

Few people realize that the cost of a gallon of paint today is not much more than it was 12 years ago. It has a higher solids content, better performing resins, more expensive solvents, and produces better mileage. Everything else in the line of industrial raw materials has either doubled or tripled its price in the same period. This holding of the price line has been brought about by competition.

The profit margin on industrial paint naturally is at the lowest level in its history. The paint supplier wants to help his customer through service, within reason. As a matter of fact, the equipment

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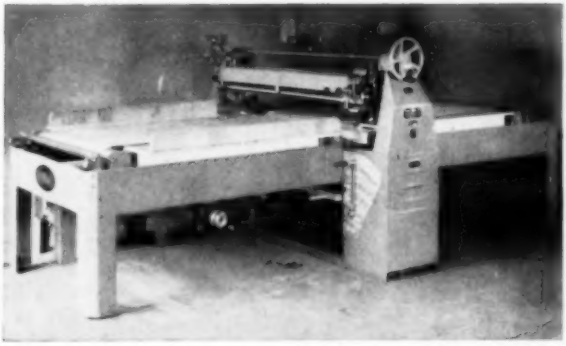

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supplier is no better off than the paint supplier, and can supply operation supervision help only for a stipulated fee. Each time that he bids on a job, he must bid against several competitors.

Perhaps this is as it should be, but the user must realize that his source of assistance, like everything else that he buys, should be purchased as a separate item, from accredited consultants. When this service is intelligently applied, the returns to the manufacturer are assured.

Manufacturing Competition Sets the Pace

We know that every manufacturer is a part of a product manufacturing category. No one is without competitors. When one in a category begins to move forward through modernization to gain manufacturing economy, his competitors must follow that lead or improve on it. This is merely normal industrial progress.

In view of the many new finishes and new finishing methods available, it is believed that the next 5-year period will be a process change period with greater intensity than ever before. These changes will be good for the industry as a whole, but best of all it will mean better coatings and better end-use performance for that important customer.

Apply Production Line Methods To Custom Built Equipment

Some 50 engineers and executives from the home and regional offices of the J. O. Ross Engineering Division of the Midland-Ross Corp. met recently for three days in New York to discuss methods of further standardizing and simplifying the company's design procedures. Greater effort in this direction will, in many instances, enable the application of production line methods to the manufacturing of the specialized air-systems equipment which Ross makes for heating, drying and curing processes.

Discussed in detail were design techniques and time saving methods associated with such specific Ross equipment as paint bake ovens, dryers, oil and gas fired air heaters, etc.

DuBois sales representatives from Illinois, Missouri, Iowa, Nebraska, Wisconsin and Minnesota attended a 2-day sales seminar recently at the Bismarck Hotel, Chicago. The current applications and new problems that arise in industrial cleaning were discussed.

Kay-Mar Dinette Furniture Painted Electrostatically

KAY-MAR Industries, Inc., in Cassopolis, Mich., produces fine metal dinette furniture —chairs, tables, cocktail tables, step tables and bar stools for furniture and department stores. All legs and frames are of tubular steel with baked-on black, gold or copper enamel finish. Formerly, these coatings were applied by the dipping process.

According to Marvin Summers, Kay-Mar V.P. and director of sales, the company changed to the No. 2 Process of electrostatic spray painting because they found that this would enable them to get a heavier and more uniform application with their metallic paints. They are now able to use a higher metal content in their coatings for a uniform high quality finish.

Although the proper application of metallic paints was mostly responsible for making the changeover in the finishing department, there are other advantages, according to Mr. Summers.

50% Less Paint Used; Fewer Rejects Now

Paint consumption at Kay-Mar has been cut as much as 50%, and with this saving, the company's 6-month paint inventory—at the time of changeover—was stretched to a 12-month supply. About one-third of the much needed floor space was saved when dip tanks were replaced with the electrostatic setup. General housekeeping was improved to the extent that the firm's insurance rates were reduced. Rejects, which formerly ran to as much as 1½%, are now reduced to only ¼ of 1%. The versatility of the electrostatic equipment enables the painting crew to make color changes quite easily.

"Our modernized finishing setup has greatly reduced fumes and odor, which used to prevail in the department. This improvement was happily approved by the Michigan Department of Health," Mr. Summers said.

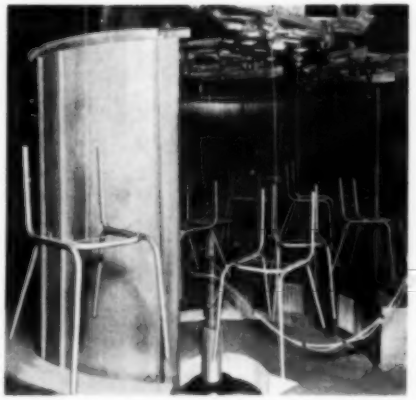
4-Stage Cleaning; Overhead Conveyor; Work Holders

Kay-Mar buys the steel tubing and does its own forming. Furniture legs and frames go through a 4-stage cleaning in preparation for painting. The 600-ft. overhead monorail conveyor operates at 9-ft. per minute; parts to be painted are placed on workholders spaced on 36-in. centers. Chairs are hung one to a fixture, while other parts, such as table legs, are grouped as many as eight to a fixture. Smaller hardware pieces are grouped in larger quantities on Christmas-tree-type fixtures.

Parts Rotate for Painting; Coatings Are Baked

The parts are rotated as they make a loop around the floor-mounted electrostatic disc which moves up and down. All surfaces receive a uniform coating. The same reciprocator stroke length is used on all parts except for the bar stool; the stroke is lengthened for these longer legs.

After painting, the parts move along into and through a gas-fired oven, where the coating is baked at 400° F. for eight minutes. From the oven, parts are moved to an inspection station, and then to assembly and packing. There is no stockpiling of painted work. Parts keep moving continuously.



Tubular chair frames are coated uniformly as the pieces, hung one to a fixture, are rotated while they make a loop around the floor-mounted reciprocating disc.

The changeover from dipping to electrostatic painting was made with but little work interruption. The plant was closed down one Friday noon and opened again—in full operation—the next Tuesday morning.

Clifford Kohen, Kay-Mar secretary-treasurer, said, "Our customers, too, appreciate the fact that we are using the latest manufacturing methods, with emphasis on quality control. Our progressive manufacturing methods mean that more and better products can be produced at more competitive prices."

Acknowledgment: The foregoing story and photographs were supplied by Ransburg Electro-Coating Corp.

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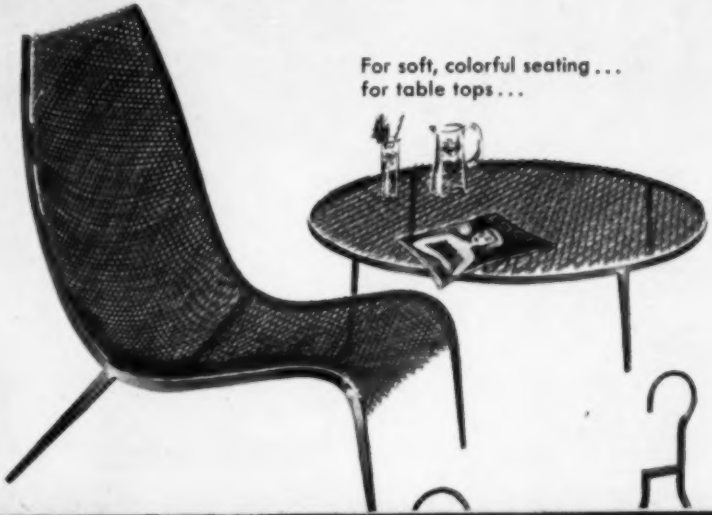

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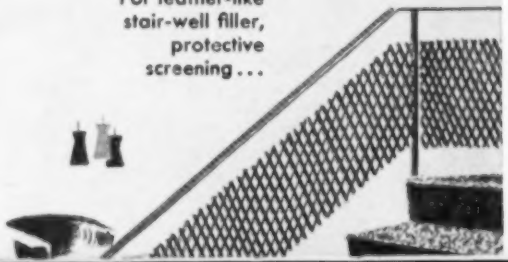

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The man from "Minnesota" was here

Result: Patio furniture has the smoothness of porcelain—wears like iron

Ever sit on a piece of lacy, cast iron furniture only to find, when you get up, that you either have chalky white paint on your clothes, or—what is worse—rust stains?

Well, most cast iron furniture isn't like that any more. The people at Atlanta Stove Works in Atlanta, Georgia, for example—continually trying to make cast iron furniture more liveable and easier to maintain—sought the advice of the man from MINNESOTA PAINTS. What they wanted, they said, was a tough, weather protective, glossy white finish . . . a finish that resists rust and humidity, stays white, and has a minimum of chalking.

The man from MINNESOTA took the problem to MINNESOTA PAINTS' staff of research chemists. After thoroughly analyzing and experimenting with the problem, they recommended the attractive, durable white finish you now see on Atlanta cast iron furniture everywhere.

MINNESOTA PAINTS' laboratory facilities and paint chemists are at *your* service, too. Let them analyze a sample of your present finish. They'll find out for you whether it is the most effective, most economical paint formulation available today for your particular application.

Call the man from MINNESOTA near you. He'll handle the whole thing. No obligation.

Minnesota PAINTS

MINNESOTA PAINTS, INC.

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PLANTS: Minneapolis, Fort Wayne, Atlanta, Dallas

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Selection and Application of CONTAINER LININGS

By C. Raymond Syer

MANUFACTURERS of steel shipping containers, as well as users of such containers, recognize the important roll that various linings or coatings are fulfilling in the packaging industry.

Many types of container linings have been developed to handle food products, chemicals and miscellaneous contents. Coated with the right kind of lining and by proper application methods, the metal containers will not corrode and their contents are well protected against contamination.

It is important to keep in mind that in packaging any material, the primary function of the coating is to protect the contents rather than preserve the container. Among the products packaged in lined containers, we might mention food and beverage products, animal and vegetable oils and fatty acids, coal tar solvents, general chemicals, the products of oil refiners, detergents, paint products, pigments and adhesives.

It is important to select the correct lining for protection from contamination and discoloration of products that are shipped in steel containers. This requires a careful selection of materials to meet individual needs. Coatings to satisfy unusual conditions frequently introduce special requirements. Resistance tests may be necessary to determine the best lining to meet certain unusual conditions. The proper application techniques must be followed to insure maximum protection.

Container Linings For Food and Beverage Products

It is obvious, of course, that foods and beverages must be prevented from coming into contact with toxic pigments or metals that could endanger the health of the ultimate consumer. The product must not absorb unpleasant taste and odor from the container. Also, precautions must be taken against discoloration, even though such a condition may be harmless.

Linings for these products are of the phenolic, vinyl or oleoresinous types. Care must be taken to assure excellent adhesion of the coating to the metal. Reverse impact, to which containers may be subjected, must not cause the lining to break away from the container and mix with the product. Here the cleanliness of the steel, the amount of lining material applied, its adhesion and its proper curing —all become important factors. Where severe shock resistance is required, extreme care must be

utilized in the selection of the proper lining and the type of application method to be used.

Animal and Vegetable Oils

Animal and vegetable oils are the types of products generally used as ingredients for the preparation of other food products. The same care must be observed in selecting a lining for them too. Also, the same precautions must be taken to obtain maximum protection of the product being packaged. Here discoloration should be prevented. Most of the lining materials for use with these products are phenolics; vinyl and oleoresinous types are used at times, but phenolics are used to a larger extent.

General Chemicals

All chemical products must be protected from contamination by rust or other foreign matter. Many of the more active compounds, such as phosphoric acid, will react with the metal container unless the lining is an adequate barrier between the metal and the product. The durability of the lining over a possible extended storage period, or the rough and tumbling during handling—these factors must be considered, too. The exact chemical nature of the product to be packaged will govern the choice of the type of coating to be used. Generally, phenolics give good protection for acidic materials. Vinyls are preferred for alkaline substances.

"He wants it painted with real mustard to get the proper mustard color!"

Pinholes Can Be The Cause of Lining Failure

The appearance of fine, pimply indentations or protrusians on a finished film can be caused by moisture in the spray lines, trapped solvent, or insufficient atomization or breaking up of the coating material when it is applied. There are three ways to prevent this type of defect.

1) The drain valve of the air transformer should be opened daily to allow drainage of collected moisture. Remove and clean the internal cleaning section of your transformer at regular intervals.

2) Do not apply materials too heavily; spray the material in normal uniform thickness coats to allow proper evaporation of solvents. Use factory recommended solvents.

3) Increase the pressure on spray gun for proper atomization, so that the overspray on your test panel will show the finest possible dots.

When Contents Are Detergents

The powerful wetting action of common detergents greatly increases the dangers of corrosion in

containers. The lining must be resistant to such action for long periods of time. Any rusting would readily discolor and contaminate the product. Because of differences in the chemical action of the products included in this class, the lining material must be carefully selected. Each detergent must be considered as a separate problem and the type of lining should be chosen according to the specific need. Most detergents that have a powerful wetting action will require a 2-coat application for safe packaging.

Solvents, Paints, Pigment, Adhesives and Other Products

These products require the regular protection from contamination. The lining must be selected with regard to any special properties and susceptibilities of the individual product to be packaged. Phenolics are used for solvents; and phenolic vinyls or oleoresinous linings for petroleum products. The phenolic type of coating is most frequently used as a lining for containers for this group of products. In many cases there are products in this group where a 2-coat system is required to obtain maximum protection.

Test Cup Evaluation Reveals Facts About Performance

Test cups made of steel are used for determining the resistance of any drum or pail lining material to a specified product. These cups are lined with the lining materials to be used and baked in accordance with the prescribed baking cycle. The lined cup is partially filled with the product to be packaged. When cups are partially filled it gives a better idea of what the vapor fumes will do to the lining. A gasket is placed between the cover and cup; the cover is then tightly clamped to the cup. Test cups containing material are stored for an indefinite period. During the test period they are examined periodically and inspected for signs of failure.

For an accelerated test, the partially filled cups are placed in a thermostatically controlled bath set at an elevated temperature. A 3-month test period at high temperature approximates the effects which might result from one year's service under normal conditions.

The most common types of failure are: Softening of the lining, blistering, and loss of adhesion to the base metal. This test method gives an excellent evaluation in selecting the type of lining best suited for packaging the product in question.

To Insure Maximum Protection; Pretreatment of Metal Surfaces

The surface to be coated must be perfectly clean and free from oil, grease or other foreign matter. An adequately pretreated surface is excellent insurance in attaining resistance properties. It is of major importance and often determines the success or failure of the lined container.

A perfectly continuous film should be applied to the interior surface of all steel containers. Make sure that the protective lining is cured thoroughly. The resistance properties built into protective linings are developed only when they are thor-

oughly heat cured. A full bake for the time and at the heat recommended by the supplier for the protective lining involved should be insisted upon. Complete polymerization of the coating is necessary before its high chemical and mechanical resistance are obtained. The various layers of coatings are fused together during the baking process, forming one homogeneous film.

Film Thickness; Can Be Too Thick or Too Thin

The correct film thickness of any lining is an important factor; it can only be obtained when the wet film is applied at the required thickness. For example: If 15--mm Pfund Thickness Gage was the wet film thickness recommended, and the baking temperature and time were 450° F. for 20 minutes, it would be wrong to apply only 8-mm and then bake at 450° F. for 20 minutes. This would cause the lining to be overbaked; it would be the cause of a failure—the lining being brittle and showing signs of fracture during fabricating operations. If correct film thickness is not applied or controlled there is always the danger of over-baking or under-baking, either of which could be the cause of a failure in the film or lining.

Control Procedures for Handling Lining Materials

Agitation. The virgin material should be thoroughly stirred or agitated before and during the time solvent is added. Constant stirring should be going on during application. Note: Plastisol material should be thoroughly stirred before and after adding solvent; however, to prevent air bubbles forming and causing blisters, it should not be stirred or agitated during application. It should be thoroughly stirred before using, if it has been previously reduced.

Straining. When transferring material to a mixing tank or any other type of container, normal precautions should be taken to exclude dirt or other foreign matter. Naturally, the tanks and coating equipment such as spray guns, hose, pipe lines, etc., should be thoroughly cleaned to avoid contaminating the material being handled, and to produce an efficient spray pattern and flow of material.

Viscosity. To insure proper application, the lining material should be kept at a reasonably uniform temperature and viscosity during the coating operation. Frequently, solvents must be added to the material to reduce its viscosity to a reading suitable for use with the desired method of application. By using a No. 4 Ford Cup or a Zahn Cup of suitable range, the viscosity can be measured. The temperature of the coating should be taken at the time of the viscosity reading. Using this control, the viscosity of the coating can be held to within close limits for proper application to obtain the desired film thickness.

Application. The method of applying the coating material is dependent to a large extent, on whether the surface to be coated is fabricated before or after coating.

Operators should be trained in the proper application technique to

Parlon® Makes Sense to Musgrave

FOR THIS STURDY MUSGRAVE MOWER A LONG LIFE FINISH

Moran Paint Company of Xenia, Ohio, has found that protective coatings based on Parlon chlorinated rubber make sense to its customers. A good example is the Musgrave Manufacturing Co. of Springfield.

For its sturdy mower, Musgrave naturally wanted a quality coating to match the overall performance of this quality product. Musgrave had specific requirements: Good gasoline resistance, fast dry, excellent corrosion resistance, no necessity for primer. A Moran formulation, based on Parlon and an alkyd resin, met the Musgrave specifications to a "T".

If you are not now getting full advantage of quick-drying, easy-sanding, colorful Parlon for the quality products now going through your finishing operation, maybe you should know more about what this long-lasting coating can do. Moran Paint provided the Parlon-based finish for Musgrave. Your own paint supplier is probably equipped to offer you the premium performance of Parlon in a formulation that meets your specific requirements. If not, write to Hercules for further information.

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produce a high quality coating. Where automatic equipment is used it should be set to control the length, speed and angle of the spray to produce a quality finish, and to prevent any possibility of rejects.

Baking. Regardless of the method used to apply the lining material, the final step is the baking of the applied film. The baking properties of linings will vary. It is therefore important that the baking heat be carefully controlled. Automatic temperature recording instruments are essential but they should be checked for accuracy occasionally.

In any baking operation, the equipment should be checked regularly to make certain that the proper heat is maintained. More uniform baking will be obtained by longer baking schedules at lower temperatures than by short schedules at proportionately higher temperatures.

The color and hardness of the cured film should be checked at frequent intervals to make sure that the desired results are obtained.

Inspection. A close check should be kept on the items being coated, both during and after coating. The applied finish should be inspected frequently at all stages of the coating operation, so that any application defects can be detected and promptly corrected, to prevent an accumulation of rejects.

The importance of controlling the actual film thickness cannot be over-stressed. A thin film is unsatisfactory, both in appearance and durability. A film that is too heavy may produce an unsatisfactory appearance and it will certainly increase the quantity of coating material used.

Inspection schedules should be established at various stages in the production line, for instance after pretreatment of the metal, after coating and after the baking cycle. These examinations should check on the continuity and coverage of the coating; they should discover blisters, broken blisters and pinholes. Proper revisions in operation should be made, where necessary, to keep the number of rejects down to a minimum.

Conclusions

To obtain a quality appearance and a successful coating, a proper finishing program must exist. This program will include the selection of coating materials best suitable for the requirements, careful and thorough surface treating of the metal, mixing and handling of materials, maintenance of correct viscosity and the correct application and baking of the coating material.

Only long experience with certain fundamental coating procedures will enable you to produce the desired high quality coatings that are needed to meet customer satisfaction, and to give the eye appeal and durability that will result in repeat sales.

Pennington Joins Bowles

T. M. Pennington has joined the sales force of Bowles Printing Co. Bowles has a Color Drift Control system which has excellent customer acceptance. Mr. Pennington is bringing to this new work a wealth of experience which he gained with work in industrial sales.

Burke Roche (left) president of Binks Mfg. Co., accepts the Premier Award of the National Advertising Agency Network for the company's 1957 annual report. Making the presentation is Scott Robertson, president of Robertson, Buckley & Gotsch, Inc., Chicago advertising agency that worked with Binks in the design and printing of the report. The Binks report was voted tops among more than 360 entries in national competition.

DuBois Co. Opens New Plant and Office in Dallas, Texas

The DuBois Co., Inc., has opened a new Southwest plant and sales office at 8770 S. Central Expressway, Dallas, Tex.

The building contains over 35,000-sq.ft. of manufacturing space and houses regional offices and laboratory. The laboratory will handle quality control in the plant and special customer problems.

DuBois manufactures and distributes chemical cleaning compounds for the metal working industries. General headquarters is in Cincinnati, Ohio.

Oakite Transfers Two Men and Appoints Representatives

Two transfers and two new appointments in its technical field service organization are announced by Oakite Products, Inc.

Ben P. Fortin, a veteran of almost 20 years service, formerly assigned to Tyler, Texas, has joined the Oakite staff in Los Angeles. His post in Tyler has been filled by Henry L. Jones.

J. G. "Jerry" Hickey has been transferred from San Francisco where he has served since 1954 to Sacramento, Calif.

Wayland E. White has been appointed to the Corpus Christi territory. Both Mr. Jones and Mr. White came to Oakite with considerable experience in cleaning service. Before undertaking their new assignments, they completed an intensive 8-week training course.

Lee H. Hill, New President of Burdett Mfg. Co.

The Board of Directors of Burdett Mfg. Co., 4920 S. Monitor Ave., Chicago, has elected Lee H. Hill as President. He succeeds Mrs. Esther B. McCormick who has been elected Chairman of the Board. Mr. Hill has had wide experience as a business executive, with a broad background in engineering and sales.

For the past 12 years Mr. Hill has been a general partner in Rogers, Slade & Hill, New York, Consultants on Management problems and as such has worked with a wide variety of large and small companies. He retains his interest in his own firm but will devote his principal attention to Burdett.

This new DuBois building is located at 8770 South Central Expressway, Dallas, Texas.

DeBurgh FLEXIBILITY avoids bottlenecks

DeBurgh conveyors are easily installed for multi-floor finishing operations or complex floor layouts. Both large and small items may be run on the same conveyor with adequate spacing and time allowed for each. Pieces can be stopped temporarily or halted indefinitely for unusual operations . . . striping, application of decals, leather tooling, antiquing, etc. As production enters the dryer, pallets are "close packed" to save valuable dryer space and time. Products may be assembled, finished, cooled, rubbed, trimmed and packed for shipment without leaving their original pallets.

The vertical curve is far more efficient than elevators. It is easier to maintain and trouble-free for carrying furniture between floors, although where space is a factor, elevators are available. DeBurgh conveyorization moves tables through "close-pack" and "regular pack" . . . handles mounting jigs for table leaves, etc.

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Selling Industrial Finishes

By George A. Conrad

IN HIS PREFACE to the classic guidebook of the industry, the late Joseph Mattiello wrote, "The paint and varnish industry is in process of transition. Its growth has been a development of the arts, but the industry is on the threshhold of becoming a science." Since Joe wrote those words the threshhold has been crossed; the industry has taken a well-deserved place among its peers in the halls of science.

Even more than the industry, the selling of industrial finishes has grown in stature. The day of the paint drummer has gone. In his place has appeared a professional consultant who purveys the materials that protect and beautify the world.

Every year an army of young men decide to become salesmen; and every year a sizable segment of that army, after looking over the many fields for their talents, become intrigued by the idea of selling paint to industry. It is to them that this article is directed. Our industry is indeed one of boundless opportunity and eternal challenge. It is also human enough to be strewn with occasional pitfalls. It is my purpose to expose both of these in their proper perspective.

Ask any veteran in the field of industrial finishes sales and he would probably advise anyone seeking to break into his profession to first consult a psychiatrist. He would tell the young man of being called out at all hours to rescue some customer from his own mistakes. He might mention how often he had poured time, sweat and prayers (or profanity) into a project for a customer, only to lose the sale to a competitor's inferior product priced a penny or two cheaper.

All of these things are true; the paint salesman's life can hardly be described as placid; yet few who enter it, leave it. Most leave it only for higher positions or related businesses. Why?

Why Sell Paint? For one reason, while few men become wealthy at it, for most men it furnishes an excellent living. Another thing: Paint being one of the most universally used products in the world, the opportunities for marketing it are tremendous. At least in this country, there hardly exists such a thing as barren territory. What other product can claim this?

Paint Users Are Everywhere; It's Fascinating to Sell

There is hardly a side street that does not reveal, to the inquisitive salesman, some business that uses coating materials in sizable amounts. True, the competition for this bonanza is keen, and the techniques employed to sell paint are as varied as the products themselves. But for those who qualify—and having qualified, can stand the pace—there is a life rewarding in every facet.

One of the chief attractions in the game of selling paint is its comparative freedom from indoctrination and regimentation. This is a unique position in an era when hawkers of everything from nuts and bolts to jet engines have been degraded into sales engineers, with all the artificial hoopla of canned talks, pep talks, and daily bowing of the head toward the main office. To be sure, a few paint manufacturers have tried to bring these tokens of progress into the industry. Some do make a pretense of teaching selling through the doctrine of the "sacred company," but not too seriously.

In the main, the industry has sensibly recognized that industrial paint products are best marketed by selecting a likable and sensible man, teaching him both the virtues and frailties of the company products, and then permitting him to sell in whatever way is most natural to his personality.

If we speak mainly of men, rather than companies they represent, it is because they seem to be the dominant factor in getting customers to try and accept a certain brand of paint. This has been demonstrated time and again by salesmen who have switched employers—regardless of their size or prestige—and, within a year transferred their customers "en masse." Tacit, if unwilling recognition of this fact is accorded by even the largest companies in the classified

ads they place in trade papers for that priceless asset, "a salesman with a following."

Yes, the industrial finishes salesman who is cut for the job will find

himself a pretty important figure in the most challenging field of the industrial world.

Qualifications of Men Who Can Sell Paints to Industry

It is to the credit and intelligence of the paint industry that most companies have never laid down any rigid set of standards to be met in staffing their sales. When a man expresses a desire to try his hand at selling, the company management tries to detect certain intangible qualities in him, rather than worry too much about his education and background. Certainly there are certain levels of sophistication, below which none would qualify; but in the main, all manufacturers want to sell paint, and they will gamble on the right combination.

Many of the most successful salesmen have started in the office or laboratory. Others have begun selling other products which brought them in contact with paint and, seeing the advantages, they switched over. It is strange, but few of them are graduates of the finishing room.

What are those other qualities that a sales-manager looks for? Probably most important is a sort of dogged persistence—that quiet stubbornness that enables a man to follow each lead and problem tirelessly, never conceding that a prospect will never buy. He must have a genuine liking for people, since few people will like one who doesn't like them. Since he will make important contacts in every stratum of society, a proper perspective and the ability to adjust are valuable. A good memory is excellent, but keeping good records and correspondence is more business-like. Being part of an industry that thrives on adversity and trouble, this is no place for the quick-tempered or temperamental man.

Since paints are basically chemicals, it would seem that a fair knowledge of chemistry should prove to be an asset to successful selling. It is hard to believe that a man could sell such a complicated product as a coating material without some knowledge of its composition. Certainly, the best men I have known always knew every answer. However, in recent years, some companies have developed a new species: A know-nothing salesman who must refer even the simplest query to the laboratory. While it may seem plausible from a young fellow, in my humble opinion, it becomes ridiculous from one sporting a 20-year pin.

Selecting a Company Whose Products You Want to Sell

One of the most appealing features in almost any type of sales work is the fact that, regardless of the state of the national economy, there is still some small choice about whom one will work for. This is certainly better than being thankful for any sort of job. By this I do not mean to imply that all paint and varnish makers are begging every potential salesman to sign up with them. Many of these firms have very rigid requirements that eliminate all but a select quota. Hundreds of companies want their products sold, and they are always willing to look over any

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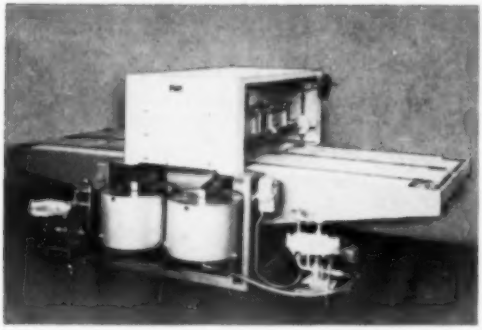

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Cut and folded. Ready to use.

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man with a possible talent for selling. These companies vary in their products and methods to such a degree that it might be appropriate to list some factors that might influence a candidate's choice. Here are a few:

1) Some suppliers of finishing materials make everything that even relates to painting. Others stick to a reasonably complete selection. At the opposite extreme are those who adhere to only a few specialized products.

2) Some companies specialize in high, medium, or low quality items. Others try to bridge the gaps, and have something for all.

3) Some firms will take orders of any size or variety; many put limits or premium prices on certain types of small orders.

4) Many manufacturers process all orders as received; others maintain certain stocks to speed up deliveries.

5) Some concerns ship everything from the factory. Then there are those who have warehouses at key points.

6) If you like to keep records and reports, you will not mind working for one that demands them. Should you find such things burdensome, select employment where they are not required.

7) With some manufacturers, salesmen can sell anything, any place. Most firms, however, assign a closed territory to each salesman.

8) Service behind the salesman can be very important, especially when he is far from the factory. This backing ranges from 100% to absolute zero.

9) How much good advertising does the company carry on to back up their salesmen?

This list could be continued indefinitely, but it gives the jobseeker some idea of the conditions he may encounter. Actually, in practice there is a fairly large turnover among young salesmen, as they seek better deals. And while there is something to be said for the "Old Reliable," the "Rolling Stone" certainly gains polish—experience and knowledge—if he doesn't roll too far.

What Training a Prospective Salesman Should Receive

If the trainee for industrial finish sales were given the proper training for his future work, he would spend about a year learning before he called on a customer. That year would be apportioned something like this:

1) One month working in the plant. (An extra month if varnish is cooked).

2) Two months working *all around* the laboratory.

3) Two months *helping* in a genuine finishing plant. (Labor)

4) Two months *spraying* in the same plant. (There is no other way to learn about and really understand the problems of the user.)

5) Two months helping to service company accounts.

6) The balance of the time, accompanying other salesmen, to get the feeling of selling.

In addition to the above assignments, every trainee should have some home-work study of company products and related interests, such

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as wood and metal surface preparation, etc. To the best of my knowledge, no company supplies this much training for future salesmen. Most firms would consider such a program impractical—even impossible—within their present organization. The amount of actual training ranges all the way from the very efficient schooling given by the big plants, to simply handing the new man a price-list and bidding him a cheery "Good luck."

The amount of training permitted or required could be a factor in deciding what type of paint producer to join. If our hopeful is certain that the customers will be push-overs, holding him back with a long apprenticeship would prove to be a hardship. On the other hand, to one who enters the business dedicating to it his life and all, preparation for the job should be a labor of love.

Why Should They Buy Your Product? Have a Good Answer

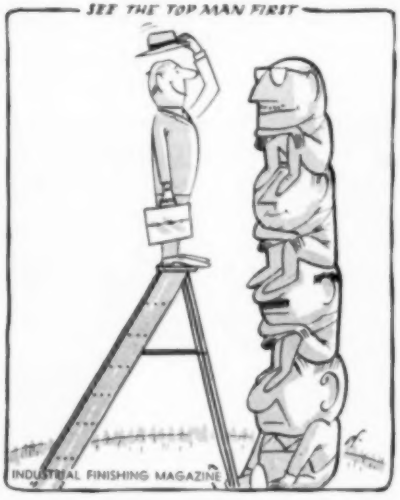
After finishing training and before hitting the road, there is one mental block that should be cleared in advance. It is the subject that will first come up between him and his new contacts. Knowing the answer will make his talk plausible and the approach less amateurish. That question is, "Why am I selling this brand of paint."

During training and at all sales meetings, one might begin to think that he is working for the only paint manufacturer in the world. Then he goes out and faces a cut-throat world where prospects are buying a competitive brand for very valid reasons. So, you see, he must have valid reasons in answer. Price, quality, old company, new company, service, better laboratory, new product, fast delivery—any reason, as long as it is logical. Two or three reasons are better than only one.

Almost every company has something that outsells everything else. Find the reason for this popularity, and you have a sound subject and answer for the opening round.

Finding Out Who to See; Be Cautious and Careful

Who buys industrial finishes? Everybody. Unlike many other industrial products, paint is seldom bought by a single person, except



in the smallest shops. This complicates the job, but makes it more challenging.

It is natural for a new man to concentrate on smaller plants at first, and this is all to the good; it gives him a chance to learn the

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TURCOAT
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PHOSPHATING

gives you up to 200 mg/sq. ft. of zinc phosphate coating in 2 short minutes at 95° F.

The Turcoat low temperature phosphating process provides permanent paint adhesion when used at an economical, easy-to-maintain temperature of 95° F. This temperature is *lower* than that required by other "cold" phosphating processes. It is up to 75° *lower* than temperatures required by conventional phosphating processes. You save up to 75% in steam, water, electricity and down-time costs alone!

As a base for paint, the Turcoat low temp phosphating process provides a uniformly smooth coating of up to 200 mg/sq. ft. in two minutes at 95°F. **As a base for corrosion prevention,** it provides an 1100 mg/sq. ft. coating in just eight minutes at 95° F.

Turco has waited to announce low temperature phosphating until it was thoroughly perfected and proven, through exhaustive field testing, to be the very best. For this reason, you'll find that with this new process, just as with Turco's hundreds of other cleaning and chemical processes, you are assured of trouble-free operation, ease of control, and dedicated technical service . . . anytime, anywhere! Write today for the full story of Turcoat low temperature phosphating, along with Turco's phosphating reference chart. There's no cost, no obligation.

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ropes in a less forbidding atmosphere. However, be careful about protocol; even a tiny shop can be a stickler for all the formalities. Whether you enter through a side door or an office devoid of a receptionist, the safest course is to ask who the *owner* is, and *get his name*; then, try to see him. If he is out, ask if someone else does the buying of paint; *get the man's name and try to see him.*

In plants that boast a fair office, the receptionist or whoever is handiest can usually give you a breakdown on buying procedure. It may not be 100% accurate concerning paint, but it will do for a starter. Always start at the top.

It is often wise, should the top man be unavailable, to pass up an opportunity to see the No. 2 man, and return to see No. 1 first. If the top man is difficult to see, ask the receptionist or secretary to get his permission to see No. 2; and so on down the line.

What You May Find in Large Organizations

One nice thing about the very large industries is that they have set up efficient mechanisms for handling all types of callers. Their receptionists are always glad to make things easier for the first-time visitor if he admits need of assistance.

Here again we start with the No. 1 man, who is probably the Purchasing Agent. Now it may happen that the Purchasing Agent will speak to you on the phone and suggest that you visit an Assistant PA who handles industrial finish purchases. This is all to the good, for it means that your first interview will be with the top man directly concerned with *your* product. Before hanging up, however, thank the Purchasing Agent for his help, and ask if you can see *him* for a few minutes on your next call. There is a good chance he'll invite you in before you leave.

Here, you begin a series of contacts that you hope will eventually bring this company to you as a customer. How well you succeed will depend on how well you run the gauntlet of some very human men, any one of whom could certainly veto your product. Each of these men acknowledges certain superiors, and very definitely considers others as his subordinates. He will be pleased when his superiors call him in to meet you, but he will be equally offended if he is short-circuited, and the introduction comes from an inferior. Your contacts may eventually encompass as many as 20 people of varying degrees of authority, but of equal importance to you. This does not mean that on each visit you must make a series of step-down calls.

The higher a man ranks, the busier he may be, consequently many advisers will suggest that you can soon pin-point your program toward someone further down. However, don't forget the higher-ups; call them occasionally and, above all, recognize and greet them if you see them in the plant.

What to Say, and How; Study Personalities

No one can tell you what to say on your first visit—or on any subsequent one. However, don't try to

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accomplish too much, or say too much. Avoid any semblance of a pitch, spiel or prepared talk; it is better to be naturally awkward than a polished phoney. Asking your interviewer about his firm's painting methods will give him a chance to carry the conversation, while you can be thinking about which product you carry that might stand the best chance.

Don't feel that reeling off a list of products or handing out a wad of literature is an accomplishment. That man will be more impressed by your announcement that you will confer on his firm's system with your Technical Director before recommending anything. Or, a simple statement about one product, such as, "Our Hammer has terrific solvent resistance," will carry a lot of weight.

Some men make their best impression on their first contact. Sensing this, many salesmen are tempted to play it to the limit and drain themselves of every subject. On later calls, they find it difficult to keep up the pace without resorting to repetition. So remember, keep some fuel in reserve; don't throw it all on the first blaze.

Much, much later, when acquaintances have ripened into firm friendships, sales conversations will be self-sustaining. The arrival of that happy day, however, will depend much on how the early calls are handled.

A lot has been said about finding the other fellows' interests and playing up to them. There is a fair amount of truth to this, but it can have certain dangers. Pretending a great interest in something, without the knowledge to make it convincing, can become a trap. Nothing can match the let-down felt by the true hobbyist when he finds his enthusiasm is being traded upon for a mere exchange of words.

The remedy for this is to do things. Go fishing, play golf, take pictures, raise African violets, or children. You don't have to be an expert; the doing generates enthusiasm and sincerity. Also, hobbies serve as a safety-valve; they are more fun and cheaper than an ulcer operation. They will make you a better salesman, too.

(To be continued next month)

Oronite Chemical Co. Expands

Oronite Chemical Co., a subsidiary of Standard Oil of California, announces a major expansion and reorganization of its development activities, including the creation of a new commercial development department. The company produces petroleum products.

FASTER . . . CLEANER . . . MORE ECONOMICAL WHEN YOU PAINT WITH THE RANSBURG

Electrostatic Hand Gun

Gator Boat transport trailers are painted in less than half the time —with half the paint—with the new Ransburg Electrostatic Hand Gun.

For instance

Peterson Bros., Inc., Jacksonville, Florida and Ft. Wayne, Indiana, world's largest manufacturer of boat trailers for the Marine Industry, switched from air hand spray to Ransburg No. 2 Process Electrostatic Hand Gun at the Fort Wayne operation in the finishing of their big custom line boat trailers and their Gator line of Marine Trades Equipment.

Paint saving with the Ransburg Hand Gun is estimated at 50 to 60% over the former method. Construction of their products (they use a lot of tubular steel) is ideal for Hand Gun application because of the "wrap-around" characteristic of Electro-Spray.

Painting is done now in an open spray room where two water-wash booths stand idle. Not needed! Maintenance in the paint room has been reduced 75%, for where they used to have to clean up the room sometimes twice a week (mostly on overtime) it now goes two or three weeks without cleanup.

One of Peterson's biggest products now painted electrostatically is a boat transport trailer, Model 807, built to haul six 16-ft. runabout boats. The trailers are over 31-feet long; overall height is 11′-2″ and almost 8′ wide. With air spray, it used to take 8 hours, or more, to paint the big vehicles. Now, with Ransburg No. 2 Process Electrostatic Hand Gun, one operator does the job in only 3½ hours. And, with half the paint!

NO REASON WHY YOU CAN'T DO IT, TOO!

Write for information and literature about this revolutionary, new painting tool. See how the Electrostatic Hand Gun can save time . . . paint . . . and cut costs in YOUR finishing department. If your production justifies conveyorized painting, it'll pay you to investigate Ransburg's automatic electrostatic spray painting equipment. Write for our No. 2 Process brochure which shows numerous examples of modern production painting in both large and small plants.

Call or write **RANSBURG Electro-Coating Corp.**

Box-23122, Indianapolis 23, Indiana

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EDITORIALS

Growth Salesmen . . . . Your Investment

Editor's Note: Here are some suggestions from a retired salesman of industrial finishes, to the younger salesmen in the field.

As a salesman, just what are you offering and what are you delivering? The obvious answer is your company's merchandise, but that is not what I have in mind. What are you selling and delivering to your employer—the man who has faith in you, who is paying you, and who has a large investment in you? It goes without saying that honesty and loyalty and what you feel are your best efforts are the return. Precisely what are your best efforts?

It has been said, and truly, that the average man uses only about 20% of his potential abilities, the chief reasons being possibly thoughtlessness and probably inertia. On the financial pages we read about "growth companies" and these are prize investments. Contrasted to the so called "blue chips" which yield an assured normal return on the investment, the "growths" offer the advantages of widening markets, novel items and the like, and yielding far greater returns on the investment. The likening of a salesman to a company is a perfect analogy.

As a successful salesman you must have and display exactly the qualities of a "growth company". The more closely you can be compared to a growth company the better and more successful you will be. Possibly the older salesmen can be considered as "blue chips"; and it follows that the younger salesmen should be a "growth" factor. The younger man has a more flexible mind and approach; he is learning and developing. However, it takes imagination, vision and work, all of which pay off in greater earnings. There is no easy road to success. Which category do you fit into? How fully are you using your brain capacity and how well are you capitalizing on your opportunities. Are you a growth salesman?—*Mr. X.*

Secrecy in Finishing is on the Wane

Few if any secrets exist in the modern production plant. If it is a material such as enamel, lacquer, cleaning compound, etc., it may be formulated to meet certain individual requirements. If it is a piece of equipment it may be slightly modified for some special use. But material or equipment, if it is commercially available, it is no secret.

The degree of success attained in manufacturing lies not in closely guarding so-called secret processes, but in the intelligent use of the best available methods, materials and equipment.

In manufacturing, complacency has no place. One never arrives. When a manufacturer settles back and says, "Well we have it licked, I am satisfied," that is a danger signal. Bet-

ter methods, new materials and equipment are being made available each day. Intelligent study and experimentation will always develop better and more economical methods of producing the product.

The days of secrecy are just about over. Many of the larger and successful manufacturers welcome suggestions and constructive criticism wherever they find it. It may come from employees. It may come from a sales or service representative, or even from a competitor or a chance visitor. Closing ones' mind and ears to the workers suggestions, remaining closely within the walls of the plant and barring the doors against all comers is certainly not the way to make a better product for the same or better still, less cost.—*P.B.*

Being Nice to People Paid Off Well

★ It was about 20 years ago that Fred first came to the shop where I was finishing foreman. He was just starting out to sell paint and, for some reason or other, I began to give him an occasional order. So, during the next few years, he became a regular caller.

One thing about Fred that always struck me as peculiar was this: Every time he came in he always made a big to-do over each and every person in the shop. No one was too unimportant for Fred to stop and hold some personal chat with. Sometimes I had a fleeting thought, "Why does he waste his time on those lugs?"

Well, as they say, "the years have flown." Six of those "lugs" have or have had jobs where they could purchase sizable quantities of finishing materials. Need I mention that all have been Fred's customers?

Even more important has been the legion of loyal missionaries who have never risen from the ranks, but who have always had a good word for Fred and his products—wherever he and they have met.—*K. Mac.*

Suggestions For Operational Improvement

★ Suggestions from employees have proved their value in thousands of instances. Certainly the finishing department needs all of this kind of help it can get to keep up with today's competitive conditions.

But even the best plans can be overdone. Suggestions about production should be welcomed—but those having to do with strictly management problems are an entirely different matter. While amanagement in the finishing plant or department should be open-minded, actual decisions can come only from those who understand all phases of the operation plus the end results. Since most workers cannot be expected to have this broad vision, their suggestions are more likely to be less useful than when they devote their thinking to improvements on or close to their own jobs.

If or when management relies too heavily on outside opinions, it runs the risk of evading responsibility that belongs to it alone. Meanwhile, some older employees begin to believe they should be "consulted" on matters that are really none of their direct concern.

To squeeze the most good from your suggestion program, emphasize ideas on production and allied topics,

★ *Guest Editorials . . . . Many readers can write an excellent editorial—two or three paragraphs that present a timely suggestion or valuable idea which will stimulate thought on a live subject. The Editor welcomes guest editorials and pays for those used.*

while giving less encouragement to plans in the management field. In most finishing plants and departments, the chances are that the men most capable of management are already in the top positions.—*G.E.C.*

Selecting a Foreman; Choice is Difficult

★ There is a trace of Horatio Alger in everyone of us. We thrill to the story of one who overcame many obstacles to rise from the ranks. Likewise we are inclined to sneer at the account of one who struggled upward to a position of responsibility, refusing to accept favors because he was the president's son-in-law. Yet, there is a measure of both right and wrong present in both cases.

A finishing consultant is constantly running into situations which can honestly be attributed to only one source—a lack of proper supervision. The foreman we meet turns out to be a hard-working, conscientious and likable fellow who just can't seem to surmount his "sea of troubles." Invariably, a bit of inquiry will unearth the fact that before becoming foreman, "Jim was the best sprayer we had" or, "Pete was the first man we employed here", or "Jake could do anything in the finishing room and do it well". That is he could do anything but supervise his department properly.

Mr. Finishing Consultant is then on a delicate spot. Many of these psuedo foremen will tactfully admit their shortcomings. Some will even admit to no love for the job. They would have been far happier swinging a gun or doing whatever they had been doing before an unwise action by management thrust upon them an unwarranted promotion. Perhaps the president's son would have been a better choice.

It would be a simpler matter if the mistake could be rectified by simply going back to the former status. But as miserable as they are, doing something for which they are not suited, many have grown accustomed to the prestige, both at work and at home. The extra money is a factor too. Besides, human nature is so perverse that it will never criticize a man for failing to seek a promotion, but it will ridicule him to death for failing to hold one. Men so down-graded are usually fired or quit within a year. And so, through such poorly planned promotions, both company and men are bound to be losers. The most skilled workman seldom develops into the best foreman.—*E.J.T.*

Vandeveer New President of Circo Equipment Co.

Wellington Vandeveer has been made president of Circo Equipment Co., Clark, N. J., manufacturer of metal degreasing and washing equipment. He succeeds Melville Morris who has resigned from the company.

Severn Carlson has been named to direct sales for both Circo Equipment and the newly formed subsidiary Circo Ultrasonic Corp. The subsidiary company will be devoted to the manufacture of ultrasonic cleaning equipment. Carlson, a graduate of Lehigh University, has been a sales engineer with Circo for five years.

Benson Carlin has been made executive vice president of the subsidiary. He is an authority in the ultrasonics field.

Shell Chemical Reorganizes Technical Service Laboratory

Shell Chemical Corp. has reorganized its Union, N. J., technical service laboratory along product lines.

Appointed under F. S. Swackhamer, laboratory director, as managers are R. F. Buller, industrial chemicals; C. M. Reider, plastics and resins; and E. S. Loeffler, agricultural chemicals.

E. F. Eckman, formerly office manager of the laboratory, is manager of administrative services.

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The finish is especially important, and Lima Register stresses long-lasting beauty, as well as durability in their high quality products. Coatings, specifically developed for this job, are furnished by Lilly Varnish Company for electrostatic application. Another example of Lilly Industrial Products at work for industry!

Lilly Varnish Company and its affiliated plants offer complete research and technical facilities. It's a service designed to aid manufacturers with their finishing requirements, and to insure highest quality product finishes . . . always.

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Automatic Equipment Paints Westinghouse Transformers

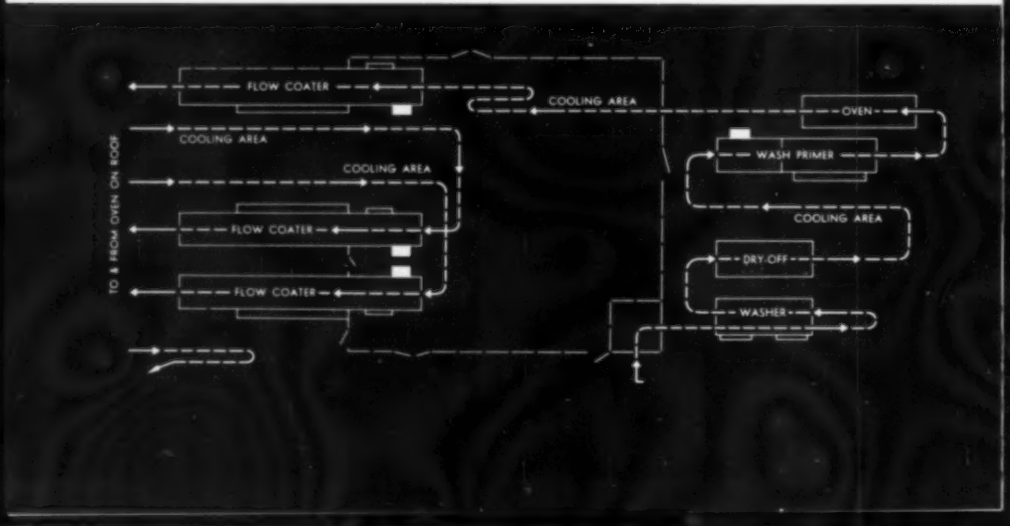
IF YOU HAVE a problem of painting exteriors and interiors of metal containers on a volume basis; if the vessels vary in diameters and lengths, and even include recesses that serve as paint traps; then you may get a few pointers from the automatic finishing system installed in Westinghouse Electric Corp's new distribution transformer plant in Athens, Georgia. It has a floor space of 560,000-sq.ft.

Here you see a combination of spraying and flow coating, which provides controlled coverage and complete penetration in painting recessed-bottom steel transformer shells. These shells are coated with a special wash primer and three coats of protective paint. It partly explains why "turning out transformers at the rate of one every two minutes is no trick" at the new plant.

The setup is a key factor among numerous process control methods and automatic handling devices of the whole automated finishing line. Here is a highly conveyorized system that saves floor space, steps up production, improves quality and lowers overall production costs.

A Completely Engineered Automation Setup

Designed, engineered and manufactured for Westinghouse by a prominent firm in Detroit, the complete finishing line was laid out to dovetail into the company's straight-through flow production line which is fed by three major feeder areas: tank and core fab-



rication and coil production. It completely surface treats, paints and dries the steel covers and miscellaneous parts of the transformers, as well as the steel shells. All painting operations are confined in an area of only 240x50-ft.

Location of the 90-ft., 3-compartment baking oven on the roof of the one-floor plant provided Westinghouse with considerable savings in production floor space, and added flexibility for automatic manufacturing operations.

The successful finishing of steel shells in this new plant revolves about four combination spray-flow coating machines. These include a coating system which Mahon engineers say is the first of its kind ever installed—involving paint application by spray and flow methods simultaneously, and in which spray coating is employed in areas where pockets of paint are normally left.

The machines were integrated in the installation to handle work in sequence with the line's steady speed of 5-ft. per minute; and to provide consistent coatings of paint film thickness that vary less than 0.3 mils from top to bottom of each steel shell.

Shells processed through the finishing line vary in size from 12 to 22-in. in diameter, and 20-in. to 4-ft. in length. Painting consists of applying a primer coating containing corrosion inhibitors, a key intermediate finish which includes tiny over-lapping mica flakes that act like shingles on a roof, and a finish coat that prevents the passage of ultra-violet radiation.

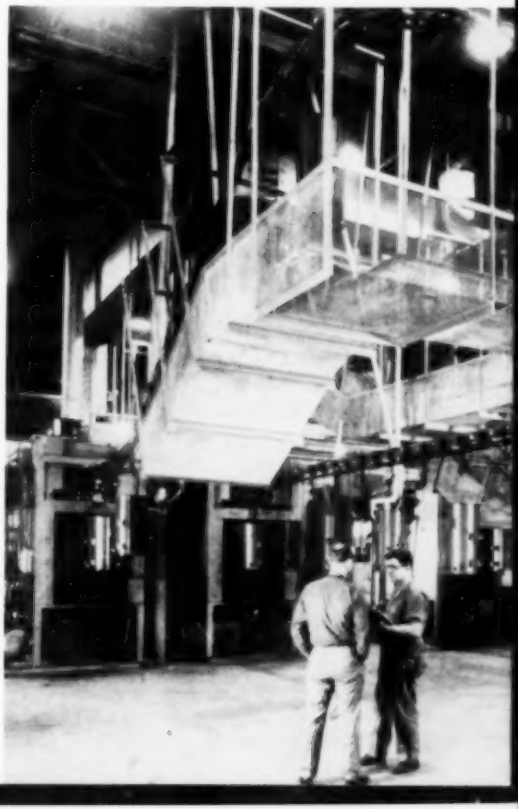
Completed shells from the shell fabricating line are fed on a roller conveyor to the loading point of the finishing line. Here they are lifted pneumatically and hooked onto a 2600-ft. overhead trolley conveyor. Since one end of the shells is closed to form the bottoms, they are loaded upside down onto the conveyor, and carried in that position through the complete finishing cycle.

Preparation of Surfaces Precedes Painting

From the loading point, the shells travel to the surface preparation equipment—the start of the finishing line. They are spray

[*Continued on page 68*]

A view in the enclosed paint room where three coats of paint are applied automatically to each transformer, as units move through successive paint and bake cycles on continuous overhead conveyors.



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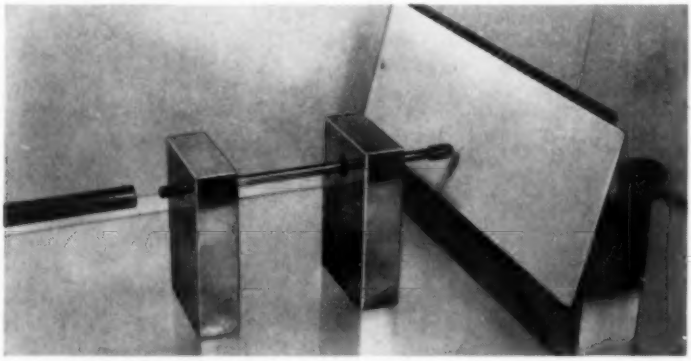
**"Filter-Flo" is a registered trademark of the General Electric Co.*



Chip-Resistance Tester subjects finish to blows of steel plunger, activated by spring action. Adjustable for force of blow and angle of impact, tester demonstrates how finish formulations stand up in use.

For more data, circle

Du Pont Industrial Finishes

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washed with an emulsion type alkaline cleaner, drained and rinsed. Then they enter an oven where the water is dried off. After cooling, the conveyor carries them to the first of four automatic flow coat machines where they are given a phosphate coating with a wash prime solution.

All outside and inside surfaces of the shells are coated with wash primer which is pumped through nozzles onto the work. The work then travels through a drain tunnel and moves through a dry-off oven. On leaving the oven, the shells are allowed to cool while they travel to the 3-coat painting section.

Three flow coat machines take over the paint area. The first machine applies a prime coat to the shells, the second applies an intermediate coating, and the third applies the final transformer gray top coat.

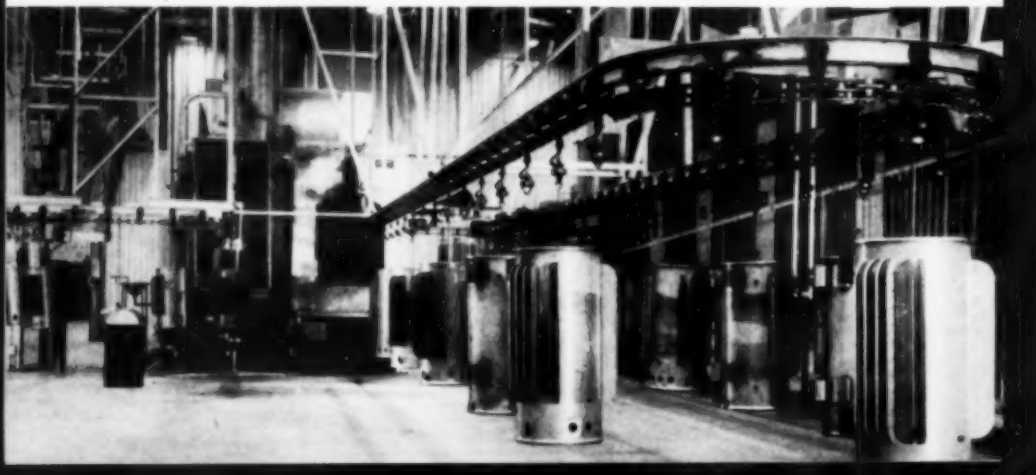
The prime coat and intermediate paint coats are applied to the outside of the shells. The interior of each shell is coated with gray to cover undesirable but unpreventable splashing of previous coats through punched holes in the shell walls.

Spraying is Combined With Flow Coating

Like the wash prime phosphate application, two spray guns in each flow-coat machine are actuated by the work hook to paint the recessed shell bottoms. Paint is applied to the interior of the shells only when the work travels to the final coating machine. This unit applies paint through a flow-coating nozzle shooting upward into the upside-down shells. Height of the paint stream from this nozzle is controlled by a valve to allow painting up inside the shells to any desired level. The nozzle goes into action only when a shell is spotted directly over it.

The performance of each machine is similar in that after paint application, the shells are conveyed through a drain tunnel, and up to a direct-gas-fired, 90-ft. bake oven

Overhead conveyors move the tanks into and through this 2-stage unit, which thoroughly cleans off dirt and grease, and dries them. Tanks then receive a wash prime coat, which is dried before they move by conveyor to the paint room to receive the 3-coat paint job.



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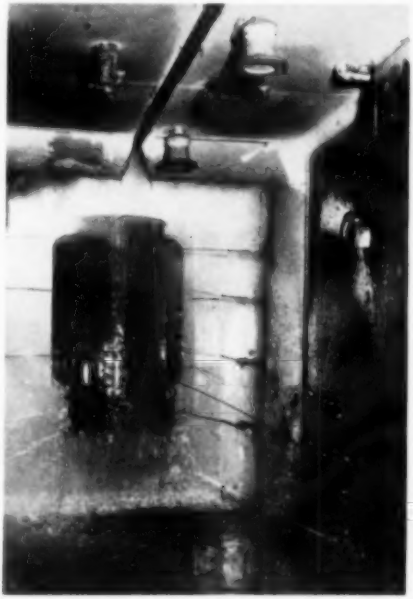
on the roof. Each of the three paint coats is baked in this oven.

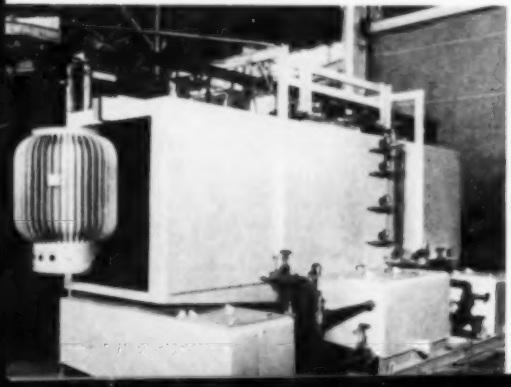
Except for bottom nozzles installed with the wash prime and final coat machine, all four flow coating machines are basically the same. The flow coating chamber of each is supplied by two tanks, one containing solvent, the other holding the paint. Each tank holds 250 gallons. Paint in the paint tanks is circulated continuously to prevent any pigment from settling.

Nozzle System; Copper Tubes; Heat and Viscosity Control

The nozzle system for each machine consists of a vertical riser on both sides of the painting station with eight ¼-in. diameter soft copper tubes in each riser. The tubes can be bent to any position for complete coverage, and are set to paint any of the different shell diameters and lengths, as well as the transformer covers which are held on "Christmas Tree" hooks. Paint pressure from each nozzle can be adjusted from 0 to 10-lbs. per square inch by shut-off valves. While in the painting zone, the shells are automatically rotated to obtain complete coverage. Spray patterns of the guns are changed only when different size shells are being processed.

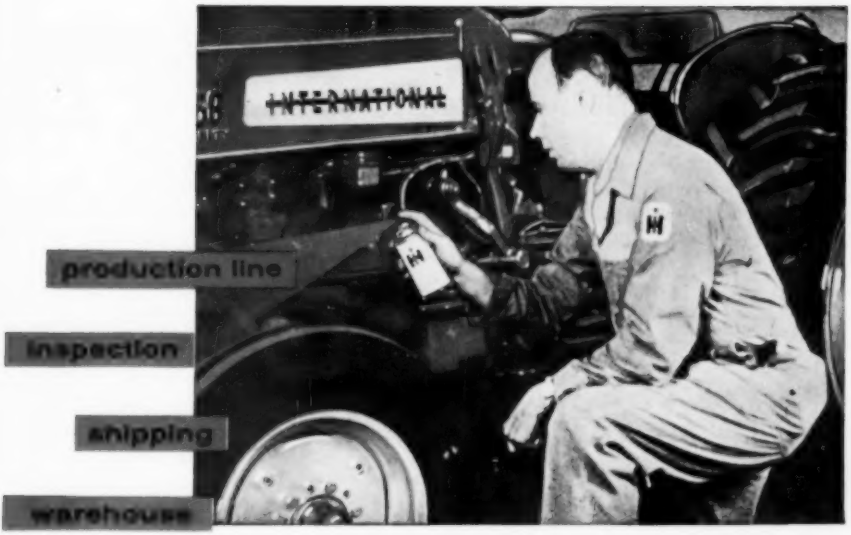


View inside one of the spray flowcoaters where each coat of paint is applied automatically for complete coverage and penetration. The final machine flow coats shell interiors via a nozzle shooting paint upwards.



Four flow-coating machines, like this prototype, solve the coverage and conveying problems in the new Westinghouse automatic painting line. Product shape indicates problems faced in automatic painting. Note how the up-ended shell is carried without the conveyor actually passing through the flowcoater.

Because paint temperature increases in pumping, a refrigerating unit is used to keep the paint temperature at its best flow coating level. Also, an automatic viscometer measures and records the paint viscosity at 2-minute intervals, adding solvents automatically as required. [*Cont'd. on page 72*]



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Paints and solvents for the machines are premixed in a volatile storage area next to the main building, then pumped to the machines. The mixing system consists of eight agitator type tanks, each holding 125 gallons. A pump for each of the machines can draw from either of two tanks, so that while paint and solvent are mixed in one, the other delivers paint to the machine.

Acknowledgment: This story and the illustrations were supplied by National Editorial Services in behalf of The R. C. Mahon Co., Detroit, Mich.

Keep Your Back Copies of I. F. in Handy Steel Boxes

At last, here's something in which to file and keep clean your copies of Industrial Finishing Magazine. Inasmuch as each copy of the publication contains a gold mine of information, you want to keep all recent copies safe from being damaged, lost or misplaced.

One of our readers worked out and made several of these welded open-end steel boxes of a convenient size to easily hold 12 copies (one year's issues or one volume). He likes it better than a binder. It's a neat, smooth, square-corner steel box, rust proofed with a blackening process and the top, back and bottom are covered with a marbleized design. We are offering these steel boxes for only $2.00 each. Industrial Finishing, 1142 N. Meridian St., Indianapolis 4, Indiana.

Keeps the 12 monthly copies (for one year) clean and handy to refer to any time.

Blakeslee Man in St. Louis

R. B. Thompson has been made Sales Engineer, serving the St. Louis, Mo., area. Thompson, who has been with the Blakeslee Co. for over ten years, has wide experience in all types of industrial metal cleaning. His headquarters are at G. S. Blakeslee & Co., 1460 N. First St., St. Louis, Missouri.

PPG Co. Expands in Belgium

The Belgian paint firm of J. G. de Coninck & Fils S. A. has concluded an agreement with Pittsburgh Plate Glass International S. A., a subsidiary of Pittsburgh Plate Glass Co., to establish a special division for the manufacture of Pittsburgh paints and Ditzler automotive finishes in the Benelux countries. The de Coninck firm is located in Merxem, a suburb of Antwerp, Belgium.

Max Fritz Joins Arco as V. P.

Max A. Fritz has joined the executive staff of The Arco Paint Co. at Cleveland, Ohio, with the title of Vice President. This is the announcement of Kenneth E. Clarke, President of The Arco Co., a division of the American-Marietta Co.

Mr. Fritz comes to Arco with a wealth of successful experience in paints, lacquers, varnishes and related products. He has held important positions with other paint manufacturers.

Mr. Fritz has been quite active in the National Paint, Varnish & Lacquer Association, and now serves as President of the Louisville branch of that body. Among his special interests he lists his work with the Boy Scouts of America, and he is also regularly engaged in church activities.

Photo: Courtesy General Electric Co.

Emphatically, YES! But only if you have a full range of temperature control as furnished by Spee-Flo Hot Spray units. This temperature control, instantly and externally adjustable throughout the entire usable range, guarantees the full advantages of the hot spray process — maximum solvent evaporation, uniform viscosity, better build, lower spraying pressures, 25–40% material savings. Don't judge full hot spray results by earlier "paint warmer" systems. Arrange for an on-the-job demonstration of Spee-Flo Hot Spray equipment. You be the judge! There's no obligation, of course.

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QUESTIONS and ANSWERS

Lacquer or Enamel for Steel Tool Heads

We are now using lacquers in finishing our tool heads, but are interested in the reported advantages of converting to synthetic enamels.

We use air dry lacquers (nitrocellulose type) and all of our parts are dipped by hand or from a conveyor.

The savings have been quoted to us at something between 30% to 50% lower costs, using enamels instead of lacquers. We are interested in knowing if you could refer us to any publications or articles which could substantiate or refute these claims?

The tool heads are steel and most parts have been given a rust and scale removal operation by either tumbling or wheelabrating prior to finishing.

The synthetic enamels we are considering will be the air dry type. The few samples we have tried were not quite as fast as lacquer but could be satisfactorily used on our existing finishing equipment.—*R. R. Corp.*

Much depends upon the quality of finish you desire. If quality is not important, then you can definitely save from 10% to almost 80% by changing over to a clear synthetic, say a styrinated alkyd. The saving will be in mileage. The drying time will be longer and you will have to do something about this—for example slow down the conveyor, extend the conveyor, or take the parts off to allow drying.

There are still other problems, such as possibly an increase in costs due to more rejects; some air-dry enamels mar easily and some are short and brittle. Here again, much will depend on what you pay for the enamel, and in what quantities you buy the material.

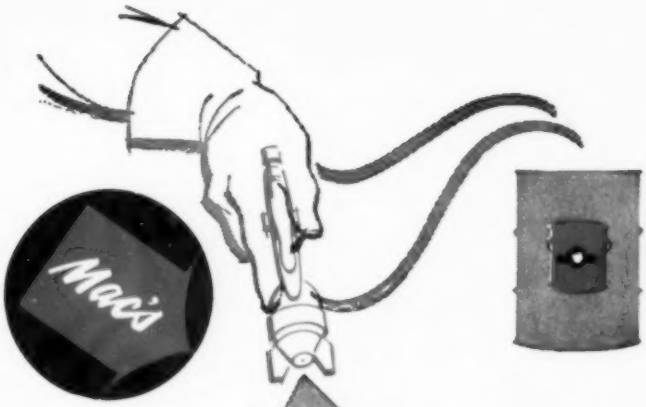
Another thing to consider in the use of enamel as compared to lacquer, with the extended drying time, there is the problem of dirt or dust settling on the wet finish.

Really you are probably better qualified to answer your own inquiry because you know what quality of finish is required; you know the physical layout of the plant, the length and speed of conveyor, how you handle the painted or coated tools insofar as drying is concerned, and the speed of production as well as the volume. You should know what mileage you are getting with lacquer and the price you pay for it. Then it would seem only logical to take the matter up with your supplier and get him to quote a price on a fast air-dry enamel of a quality that will meet your demands; and then get his opinion as to what mileage you can expect, based upon your methods and equipment. This will give you the answer to your question.—*D. I. N.*

There is little doubt that the savings will be as much as you anticipate when you switch from lacquers to synthetic materials for your dipping operations.

In the first place, synthetics normally sell at about 35% higher solids per dollar than nitrocellulose lacquers.

[*Continued on page 78*]



5-Gallon Can at Drum Price

Order a 5-gal. can at drum price and Convince yourself

Satin Finish Wooling Lacquers

These are ideal lacquers for use where a satin sheen finish with a smooth, silky feel is desired, without requiring a costly rubbing operation.

Their intrinsic and economical values are fully appreciated when used in place of the regular semi-flat lacquers, to produce the much desired satin, velvety finish.

Mac's Satin Finish Wooling Lacquers, if steel wooled only, or if steel wooled with wax using 3/0 or 4/0 steel wool, will produce a very smooth, silky, and scratchless finish that feels more silky than the regular satin finish lacquers. The steel wooling process is inexpensive and easily done.

Mac's Satin Finish Wooling Lacquers are made in different sheens which may be a flat comparable to a 20 sheen or as bright as a 75 sheen lacquer. They may also be used without steel wooling and will produce a fuller and more homogenous finish than the regular semi-flat lacquers.

Mac's Satin Finish Wooling Lacquers are available in water white light resistant, for use on white or pastel finishes, or in the regular lacquers for the darker shades such as mahogany, walnut, etc. The water white satin finish wooling lacquers are universal lacquers and may be used on both white and medium to dark finishes wherever space for storage is important.

When ordering, advise sheen desired and whether you want water white or regular satin sheen wooling lacquer.

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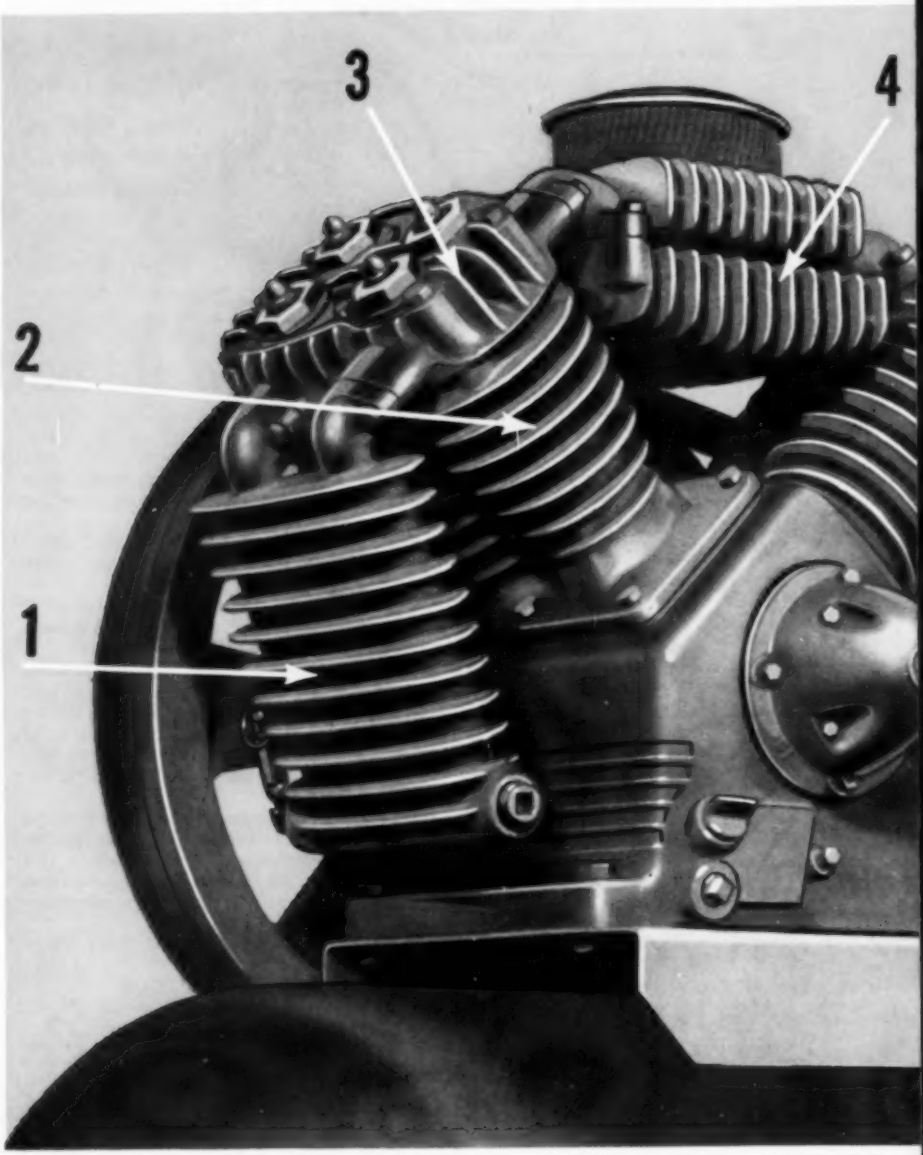

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2. **Finned Cylinder Walls**
3. **Finned Cylinder Heads**
4. **Finned Aftercooler**
5. **Finned Check-Valve Manifold**

The cooling system of a compressor makes a big difference in operating efficiency. The hotter the air delivered into the tank, the greater the shrinkage when it cools. A cool-running compressor delivers low-temperature, less-expanded air to the tank, resulting in fewer running cycles for any air demand.

DeVilbiss compressors with their greater finned cooling area deliver air to the tank at lower temperature. Result: less air shrinkage in the tank, less frequent running cycles, less power consumption.

Notice the finned, cast-iron intercoolers (1), with large-capacity chambers which retard velocity of air to permit a longer cooling cycle between compressing stages. Deeply finned cylinder walls (2) and heads (3), for rapid, thorough heat dissipation. Finned aftercooler (4), that lowers temperature further before air enters tank. Even the check-valve manifold (5) is finned for maximum aftercooling.

Send for Catalog C-51, or call the local DeVilbiss representative for all the facts.

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Second, you reduce (thin your enamel) more rapidly with far cheaper solvents than you must use for thinning lacquers. Less solvent is lost by evaporation.

Third, enamels lend themselves to dipping application better than lacquers. The slow solvents facilitate better flowing properties.

If it is desired, one dipping of a synthetic can build a film thickness equal to two coats of lacquer. As a matter of fact, lacquers are difficult to re-coat due to their tendency to re-soften and drag off.

As you have noticed, modern synthetics are almost as fast as lacquers in dust-free drying. They are usually as fast in final dry or "packing dry". They are superior in appearance and at least the equal of lacquer in practically every physical test.

I feel sure that you will be pleased with your decision. The only thing I might suggest is that you plan for a baking oven and a final switch to baking materials.—*Geo. A. Conrad.*

Questions about the economy of using an enamel or a lacquer arise frequently. There are factors involved other than a simple comparison between the cost per gallon of the two materials.

To start with, the solids content of nitrocellulose lacquers is usually between 25% and 35%. The solids content of an enamel is usually between 35% and 55%—and higher with exceptional materials. If the coating is being applied solely for decorative effect, this difference is of small consequence. Under these circumstances lacquer, at the same price as enamel, would be economical. In the case of a tool head, however, a protective as well as a decorative factor is involved,

[*Continued on page 82*]

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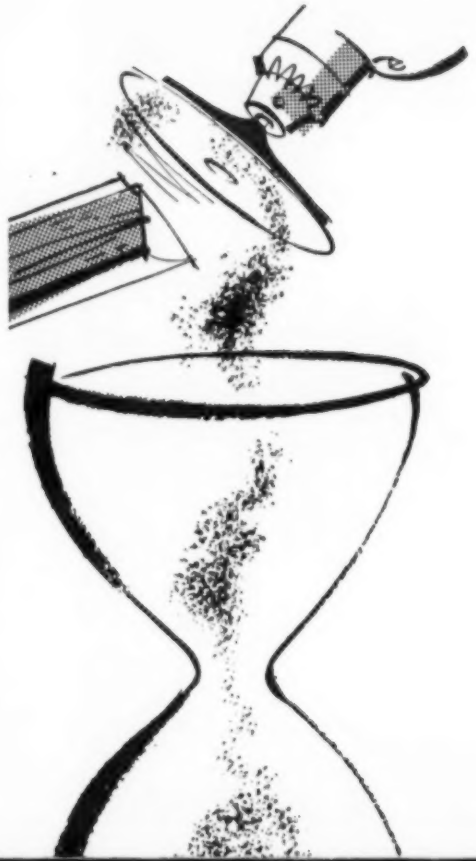
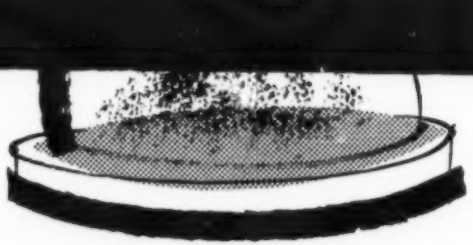


Sanding time cut 38% with LOWE VINOC

Another example of the kind of cost-saving ideas you can get from an experienced Lowe Brothers finishing engineer. Here's the story:

"I suggested Lowe Vinoc when the plant superintendent



finishing with Vinoc, and they're well pleased with its appearance. The 38% is their figure."

Let a Lowe Brothers finishing engineer help *you* find ways to reduce costs. He knows finishes *and* methods — and he'll gladly make a "flow-chart" analysis of your finishing system if you'll send the coupon. No obligation, of course.

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and the solids content should be taken into consideration.

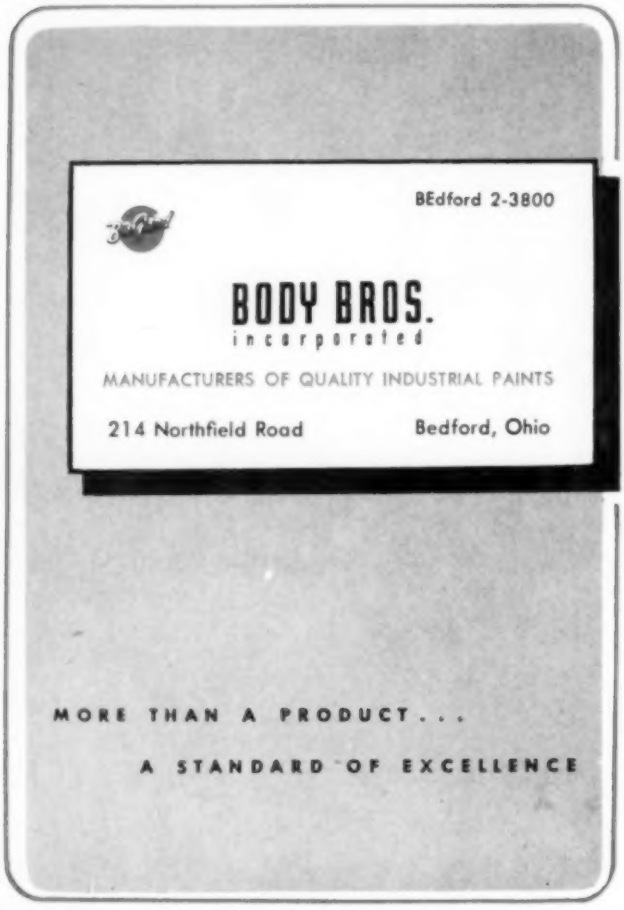
A further cost is that of the reducer. Enamels for dipping average a 25% reduction with thinner which is in the 30¢ per gallon range. A dipping lacquer would average a 30% reduction with lacquer thinner in the $1.00 per gallon range.

The quality of either of the two materials is subject to wide variation, depending upon cost. In general, however, lacquers when applied over unprimed metal, tend to be "short" and lacking in adhesion. Considering the abuse and service which a tool receives, an enamel would be more appropriate to the end use.

The other possible variation which could influence your decision is one of time and space. Enamels take somewhere between 15 minutes and 16 hours to air dry. A lacquer, on the other hand, sets up almost immediately. If a considerable number of pieces are being dipped in an air-drying enamel, it is conceivable that the additional space required would outweigh the advantages which ordinarily would accrue to this material. In a piece the size of a tool-head, however, this should not be a major consideration.

Everything considered, at equal film thickness, the statement that enamel is 30% to 50% cheaper, is correct in this particular case.—*K. Schreiber.*

The supervisor's rating among his people is affected by the way he keeps his promises. He should not make pleasant promises unless he intends to keep them.



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Technique of Finishing Refrigerators

One of my clients, who is manufacturing refrigerators in a limited quantity, is using the following finishing method:

1) Degreasing of metal with trichlorethylene vapors.

2) Wash primer spraying.

3) Hot spraying of a first coat of white enamel with a base of urea melamine resins.

4) Oven drying accordingly to the time and temperature prescribed.

5) A second hot spraying operation with the same enamel.

6) Final drying as above.

By using this system he has, until now, obtained acceptable technical and economical results, with the exception of an inconvenience which can be stated only after some years. It is caused by the adherence of the sweat, and also of the grease of the hands into the external superior angular end of the door, causing a softening of the film on the above mentioned part. The trouble is occurring when the housewife (in Italy preserved foods are not used very much) closes the door by putting the greased palm of her hand on the film instead of putting it on the handle.

My client would now like to adopt the following system in order to avoid this inconvenience and reduce the finishing cost:

1) Degreasing, as above specified.

2) Spraying of a first film of flat white with a base of catalyzed epoxy resins, instead of the wash primer operation.

3) Oven drying according to the time and temperature prescribed.

4) Hot spraying of a finishing white enamel with an urea melamine resin or catalyzed epoxy resin base.

5) Final drying as above.

Naturally, my client thinks that the first coat with an epoxy resin base may give, as a result, a greater resistance to the adherence of the sweat and of the grease acids, keeping the metal sufficiently free from the corrosion of damp kitchens and be, at the same time, suitable for a better complete film.

Please tell me also some information about the diffusion in the States of amine cured system or epoxy resin system for refrigerator finishing.

As I do not want to influence the opinion of your experts, I don't inform you about the opinion expressed by the technicians of my factory, and I would be really obliged to receive from you this technical information, which I shall submit to the management of the refrigerator factory.

I am thanking you in anticipation for your kind assistance and for your courtesy, which I shall be very pleased to return to one of the friends of your magazine at the occasion of a trip in Italy.—*L. W., Milano, Italy.*

The problems described in your letter are well understood and this has also been a problem here for many years. The solutions proposed by you are basically correct—with a few minor exceptions.

In the U. S., vapor degreasing is hardly ever used for refrigerator surface preparation. An iron phosphate treatment is used in its place. The use of wash primer on such surfaces was discontinued years ago.

The use of a modified epoxy primer in place of the wash primer should be considerable improvement insofar as grease resistance is concerned. Many users here have adopted flow coating for the first coat in order to obtain continuous films on all surfaces. This has become necessary because, as a paint supplier, you would have no control over the quality of the work done by hand spraying. Modified, but not catalyzed epoxy primers are generally used.

A urea-melamine modified alkyd finish coat is the popular procedure here. An epoxy ester modified finish can be used where extreme conditions exist, but catalyzed epoxy solution finish coats are not generally used for this purpose.

If you desire information concerning flow coating application equipment, I suggest that you contact Signors Elettrotermica Adamoli, Sesto S. Giovanni, Via Masanielle 58, Milano, Italy. I have just returned from a visit there and can assure you that they have full knowledge of the latest compact, economical equipment. —*E. A. Zahn, Finishing Consultant.*

Color-Coating Heavy Aluminum Foil

I am sending you a small sample of aluminum foil such as is used for food closures, milk bottle tops, etc. I wish to duplicate this finish with a wide range of colors.—*N. N.*

The sample submitted certainly appears to have been coated with lacquer, and incidently it is a nice brilliant clear color.

There is a choice of methods of application as well as the materials to use. I assume that you are interested in rather long production runs, in which case the rotogravure printing process would be indicated. A roller coater might give a streaked effect on foil. In the case of short runs the material could be silk screened. Either method could be used for detail or design work or solid covering. Of course, you could also spray but that would not be economical. Below are listed some of the types of material you can use, and I have made notes on their qualities.

As regards toxicity, you should have no trouble, but an inquiry should be made of the supplier of the finish.

In order to secure clarity and brilliance of color, I would use one of the transparent lake colors (for example, RBH colors manufactured by Interchemical). The color range is wide and they are transparent and bright. While it is possible to use straight pigments, they would probably give you a cloudy or smoky film, and not have the required brightness. To sum up: Production work would call for a rotogravure printing process, and incidently the sheets are force dried for from two to four seconds at 250° F. to 300° F.; short runs could be screen printed or sprayed for non-design work.—*C. B.*

For Flexible Rubber That's Wet and Dry

We are looking for a paint to be applied to black synthetic rubber conical buoys which are used in a fresh water lake. The paint must not attack the rubber, and at the same time it must be fairly water resistant. The bases of these buoys will be submerged in the water from 24 to 48 hours at a time; then they will be out of the water long enough to thoroughly dry; they will be used repeat-

Material	Adhesion	Water Resist	Flexibility	Exposure
Lacquer	good	fair	good	outside fair
Ethyl Cellulose	good	good	good	outside fair
Half Sec. Butyrate	excellent	excellent	good	excellent outside
Acrylics	fair	excellent	good	outside fair
Vinyls	excellent	excellent	good	excellent outside

edly. We are looking for a paint that will stand up under intermittent wetting and drying for a reasonable time, without repainting.

Can you suggest the type of paint we could use? Also a source of supply?—*M. S. Co.*

For coating these rubber buoys I suggest you use a latex paint, a water-emulsion type which has high water resistance, once the coating is thoroughly dry. Because these buoys (constructed of a series of rubber inner tubes adhered together one on top of the other to form a conical column five to six feet high) are likely to be very flexible, I do not believe that an ethyl cellulose base coating will be satisfactory. Such a coating, to be used on a flexible rubber product, would have to contain so much plasticizer that your end use would be nullified.

What you will have to find is a water miscible paint which, after it is thoroughly dried, will have high resistance to water. Such a paint, if purchased in small quantities, may be very high priced; however, I believe it will produce better results. In a letter I am giving you the names of several firms who may be able to furnish such paint.—*J. C.*

Dust in Spray Room

Our biggest dust problem now is caused by dust particles flowing into the spray room when the doors are opened to allow trucks to pass in or out.

We feel that a good type of material on the floor—perhaps oil and sand saturated sweeping compound—would eliminate this problem to a great extent. However, we find that by using this, the material gets on the wheels of trucks and when placed in the ovens dries out and flies around in the ovens.

Are you familiar with some type of compound which, when dry, will stay put, or some type of floor covering which will catch dust and still allow the trucks to roll?—*X-Ray.*

We do not know of a floor surface or compound that will catch and hold dust, stay dry and not cling to the wheels of trucks which are rolled over it.

We recommend that you solve this problem like thousands of others have done and are doing. Enclose your spray room with partitions and pressurize it. With a suitable arrangement of ventilating fans, air filters, ducts, etc., you force more clean heated air into the finishing room than is pulled out of the room by exhaust fans in the spray booths. A competent ventilating engineer can design a balanced arrangement for you.

The end result is to have slightly more air pressure inside the finishing room than outside, so that when a door is opened the air flow will be outward from the room instead of inward. Any flying dust adjoining the finishing room will be blown away from the opened door instead of being sucked into the room through the door—or through conveyor openings. The excellent results from this cleanliness will surprise you; it will be well worth the expense to which you are put to attain it.—*Editor.*

Ziegler Is Now Sales Manager For Kolene Corporation

William P. Ziegler, Jr., has been made national sales manager of Kolene Corp., Detroit designer and manufacturer of molten salt bath equipment and processes used in a wide variety of metal cleaning applications.

Ziegler has been with Kolene since 1949. He is a member of the American Society for Metals and the Engineering Society of Detroit.

Oleum Spirits; Rubbing Oil; Piano Finish

In most of the articles I read on wood finishing the authors always mention a special rubbing oil in the final blocking and rubbing. Many mention it as Oleum Spirits.

What are these special oils (Oleum spirits for one) and where can they be purchased in this area (New York City or Boston)? I have tried all of the suppliers and no one seems to know what I am talking about. Most of them seem to think it is nothing but paraffine oil. I am using paraffine now in my final rubbing but I still do not get the results that I am after —the piano finish.

I specialize in rebuilding and refinishing pianos; also I make new ones and I would like a better looking finish.

My best finishes at present are the water rubbed ones, but I am looking for a little more full bodied depth. The average finish is the following: sand, stain (NGR), wash coat, fill; one coat of sanding sealer and four full-bodied coats of 27% gloss lacquer. —*S. S.*

Oleum spirits is a general name for any of a number of petroleum solvents such as mineral spirits, benzine, etc. Perhaps the special rubbing oil you refer to is made up of just plain crude oil cut 50% with benzine. This has been used with success by many piano and furniture makers. Other finishers have used a liquid soap or soap gel with water as a rubbing lubricant.

You might experiment on some sample panels by brushing on two coats of filler, allowing sufficient drying time after each coat. In other words, apply two filler coats with the same drying time you are now using after each coat. Allow plenty of drying time after each coat, and from ten days to two weeks drying time after the last lacquer coat before rubbing the finish. This may seem to be excessive drying, but for permanence and quality there is no substitute for time, that is, unless you wish to go into force drying of the finish with controlled heat and humidity.—*P. C.B.*

Oleum spirits is a term applied to quite a large series of solvents. Our chemical dictionary defines them as follows: "Petroleum solvent with a boiling point range of from 19° to 480° F.," which just about covers the entire solvent list both aromatic and aliphatic. For your rubbing and polishing I would imagine you would use No. 250 (Standard Oil of Calif.) which is somewhat faster drying than regular painter's thinner. Either one of these items would work.

Any supplier of solvents and/or thinners can easily match the above. I might mention, in passing, another item—non-blooming oil. This is a light bodied oil and quite colorless. It has the virtue of leaving practically no after haze. I have used it for years as a rubbing and polishing oil. Any oil company can match it from the following term: "Pale Base 100 oil." This also happens to be Standard of California's name, but I have been assured that this description is quite universal in the oil refining industry. You may find that the oil companies will supply it only in drums or possibly in five gallons, so you may have to secure it through some jobber.

In order to get a "more full bodied depth" of color, my suggestion is to use water stains of the appropriate color. They will have excellent light fastness with practically no migration or bleeding into any succeeding coats—and, of course, their use involves no fire hazards. For many years this has been the standard of excellence in furniture and fixture

shops. Admittedly there will be some grain raising, but in a piano finish you should be able to tolerate this expense. Your schedule sounds good, and with 27% solids build the finish should be satisfactory.

Have you ever sprayed at elevated temperatures, for example 140° F.? It is an interesting idea; you can get exceptional build very easily and quickly, with other definite advantages. Why not ask your regular supplier about this?—*C. R. Brown.*

To Remove Silicone From Polyethylene

Please advise your suggestions for removing silicone oil from polyethylene or polystyrene, so that such plastic can then be painted.—*L.I.R.*

I offer the following suggestions for removing silicone oil from polystyrene or polyethylene plastic:

1) To remove silicone oil from polystyrene plastic, the best method would be to wash or rinse the plastic at least two or three times with a non-attacking solvent, such as ethyl alcohol or VMP naphtha. The VMP naphtha perhaps would have slightly better compatability with the silicone oil, thereby removing it more quickly.

It is important to wash the plastic several times in the solvent, using a new or second wash. Throw out the old contaminated solvent after continuous use in order to prevent traces of the silicone oil from being transferred to the plastic from the "dirty" solvent.

2) The same method can be used for polyethylene. Inasmuch as most polyethylene plastic is inert to solvents, a wider choice of cleaning solvents exists. Xylol would be preferred for the polyethylene plastic, inasmuch as this solvent has the best solvency or compatability with silicone oil; and it would necessitate the use of the least amount in removing traces of the silicone.

Whichever thinner is used, it is vital to avoid contamination of the plastic from the silicone oil dissolved in the solvent, as even the slightest trace picked up from the solvent by the plastic will cause difficulty. If these simple precautions are kept in mind, polystyrene and/or polyethylene plastic can be properly cleaned of any traces of silicone oil, thereby leaving a suitable surface for painting.—*Edward Berberian, Chemist.*

Coating polyethylene and polystyrene are two entirely different matters. The former has excellent solvent resistance, whereas the latter has poor solvent resistance. As a matter of fact, polyethylene squeeze bottles are used as hydroflouric acid containers. Thus the removal of silicone oil from polyethylene would be merely a matter of using a suitable solvent, and there would be little or no effect on the film.

On polystyrene you would be restricted; probably anything stronger than xylol or *Socal* 2 would attack the surface. In any event it would call for plenty of clean solvent and clean wiping materials. If the presence of the silicone oil causes "fish eyes" in the finished work, there are additives for the lacquer to eliminate these. This is a well known item, and can be obtained from your supplier of paint products. Also, your supplier should be able to furnish a suitable formulation for polystyrene.

In the case of polyethylene a pretreatment is necessary. One is the so-called flame method, which is essentially playing a clean blue flame (like a bunsen burner flame) on the surface with a cooling agent on the reverse side. The temperature is around 300° F. Another method is to

pass the work through a heat oven so as to heat the surface to 212° to 300° F. and then cool it rapidly.

Another method is known as the acid dichromate method. A saturated solution of sodium dichromate in concentrated sulphuric acid is used. Work is immersed in this solution at room temperature, removed and washed in clear water and dried. This is said to be instantaneous. All of these methods are covered by patents and probably are licensed.

I understand that there are several firms making printing inks for polyethylene; and they should be able to supply you with a coating and also the proper procedure. One of these is Interchemical Corp.—*C. R. Brown.*

Acetic Acid Method of Testing Finishes

Referring to May 1959 issue, there is an article on pages 94 and 95 entitled, "Yes, Lab. Tests do Reveal Valued Information." This article mentions a "new acetic acid method" of testing in the same paragraph with the salt spray testing. I am interested in this acetic acid method, and I would appreciate any and all information that you can send to me on the subject.—*A. E. B.*

The basic acetic acid test utilizes a 5% salt spray but the pH is adjusted to 3.2 to 3.5 with acetic acid. This method is not new in that it was first reported by C. F. Nixon in Monthly Review, American Electroplaters Society, November 1946. This particular test, while reliable on metals has only questionable value for organic coatings.

Within the last two years, however, a fast new variation called the Cass Test (pronounced "Case" by many people) has been developed. This, in 16 hours, produces results comparable to one year of outdoor exposure. The solution used is a 5% (by weight) solution of salt (sodium chloride) and one gram per gallon of cupric chloride. The pH is maintained at 3.2 plus or minus 0.1 with acetic acid. The solution is sprayed into the chamber in a mist. Temperature within the cabinet is maintained at 120° F. plus or minus 1°.

This test has not been fully evaluated on organic coatings but this writer is working on some variations which could prove acceptable as a test on organic films. I trust this supplies some of the information you seek.—*Norman I. Gaynes.*

Pacific Promotes Executives

Appointment of L. E. Thompson as general sales manager, and K. H. Johnson as general production manager, has been made by Pacific Paint & Varnish Co., a division of United Wallpaper, Inc.

Thompson has been with Pacific since 1951. In his new capacity he will be responsible for continued expansion of industrial sales and service.

Johnson has served as paint production manager since 1945. All production activities will now be headed by him, and will include purchasing and plant engineering.

Pacific's plant is in Berkeley, Calif. District sales offices are in Los Angeles, Calif., Tacoma, Wash. and Salt Lake City, Utah.

Quigley Moves Up in Dow Chem.

The advancement of Fred K. Quigley, Jr., has been announced to the position of staff manager of coating materials in The Dow Chemical Co., Midland, Mich.

Quigley has been assistant manager of Coatings Technical Service (CTS) since 1956. He succeeds E. K. Stilbert, recently named a product group vice president of Dow Chemical International Ltd., S. A.

In his new post, Quigley will be responsible for long range planning and coordination of research, development, production and marketing in connection with Dow's expanding interests in the coatings field.

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LETTERS from READERS

Acrylic-Butyrate Lacquer

We have a request for a reprint of my article, "Acrylic-Butyrate Lacquers for Wood Furniture," which appeared in the June 1959 issue, pages 42, 43 and 44. Would you kindly send a reprint to the individual named in our letter?—*G. A. Lenaeus, V. P., Southern Varnish Corp. (Research and Production).*

We have no reprints of this article, but are sending to the individual named, tear sheets of your excellent article.—*Editor.*

Finishing Consultants

I would like to receive a copy of the article entitled, "A Finishes Consultant" by E. A. Zahn, which appeared in your November 1958 issue. —Westinghouse.

Copy is being sent.—*Editor.*

If possible would you furnish us with address of several Finishing Consulting Engineers within the near vicinity of Kewanee, Illinois?
—*K.M.C.Co.*

In a letter we are sending you the names and addresses we have.—*Ed.*

On page 72 of the June issue, I noticed the request for consultants in or near New York City, who are in contact with the Automotive Industry. As I am in that phase actively and in contact with the big three daily I feel I can do justice to this account. Please either forward my name to them or let me know where I can contact them directly. Please add my name to your list of consultants.—*Norman I. Gaynes.*

. . . . . We assume that you included our company in that list. If not, please give us the complete firm name and address so that we can contact them directly.—*Henry R. Friedberg, Technical Director, The Frank I. Crobaugh Co., 3800 Perkins Ave., Cleveland 14, Ohio.*

The writer has had a wide and lengthy experience in the finishing field, both in manufacture and uses, and believes that this might be of interest to these people. Will you please forward the name of interested people so that I may further explore this possibility.—*Fowler L. Osborne.*

Editor's Note: The above individuals have all included their respective addresses, but from a Robert J. Rhoades, we received two letters offering his services as a consultant, but he gave no address and he is not on our list of subscribers. We hope that he, or someone who knows him, sees this and will write us.

Reprint it in Spanish

We are interested in publishing a Spanish version of the article written by P. C. Bardin, Associate Editor, "Control Solvent Vapors and

Put Them to Work," printed in your July 1958 number. So we expect your kindly permission and we shall thank you in mailing us the three photographs contained in this article.—*Pinturas y Acabados Industrales, Barcelona, Spain.*

Permission granted and photographs mailed.—*Editor.*

"This 'on the job' background music would be okay if they'd only work to it."

Bowling Pin Finish

We have noted a letter to you concerning plastic coating of bowling pins. It appeared on page 26 of your June 1959 issue. Hercules Powder Co. manufactures ethyl cellulose, the primary raw material for such gel lacquer coatings. We are naturally interested in assisting companies in the development of plastic coatings for bowling pins.—*Jerome D. Towe, Ethyl Cellulose Sales, Hercules Powder Company.*

In a letter we are telling you who made this inquiry.—*Editor.*

Highlights of Eddie Zahn's Visit to Europe

Dear Bill: You will recall that I had agreed to let you know of anything interesting in Europe as soon as I returned from my annual trip over there. . . .

Going through France, Germany and Italy, I saw many fine finishing installations. As you know, Flow Coating was my number one interest on this trip and I concentrated on that.

In France, I saw something entirely new, as concerns Flow Coating progress. At the plant of "Peugeot" (automobile manufacturer) in Beaulieu-Valentigney, they have a new, compact, low pressure, reciprocating flow coater which is the most successful that I have ever seen. It didn't make me unhappy to hear that they call this the "Zahn" process. This rather amazing machine was designed and built by "Colonair" of Paris, France.

I have always believed that low pressure flow coating would some day be done with only a few small round nozzles. In the Peugeot machine, there are only four ⅜-in. I.D. round nozzles, in a two plane motion, supplying paint to complicated pieces at a maximum pump pressure below 6-lbs. per sq.in. This is even more exciting in the fact that less than one gallon of solvent per hour is required for operation. This proves the theory that solvent usage is proportional to the number of gallons of paint pumped per minute.

The builder of this equipment, Colonair, has French patents on the new flow coater; and is in the process of securing patents in other European countries where it already has licensees. A U. S. builder has also conceived the same idea and is about to announce it. This, I understand, is also undergoing patent handling. All of this could mean a lot

of new activity in revamping existing flow coaters in Europe and in the United States.

There is activity now in both Italy and Germany on this new flow coater and it appears that all have been waiting to see the Peugeot machine operate. In Germany, I visited with a finishing equipment builder and a paint supplier; and together we visited a large tractor plant in Koln where two of the new type flow coaters will be installed.

In France I visited the Electrolux plant in Paris and also the Simca automobile plant. At Electrolux they have the first new type (pilot model) flow coater. This also was furnished by Colonair. The flow coaters at the Simca plant are of the old variety.

In Milan, Italy, I visited an equipment builder and a large refrigerator plant. I also made a return visit to Innocenti where they flow coat the Lambretta Motor Scooters. The two flow coaters at Innocenti and the two at Simca are scheduled to be converted to the new process soon.—*E. A. Zahn, Finishing Consultant.*

We Can Supply It

In July issue we note inquiries for 1) simulated brushed brass for metal legs from F. W. Co.; 2) a durable gold lacquer; 3) a clear rustproof coating; 4) lacquers for tumbling.

We have been supplying these products for some time and would appreciate being referred to the respective inquirers. If you prefer, we would like the names and addresses of the companies who inquried.—*Processed Chemical & Coating Corp.*

We notice an inquiry regarding lacquers for application by tumbling. We manufacture both lacquers and enamels suitable for application by tumbling, and would appreciate the name and address of the inquirer, "C. C. C." (July issue, page 80), so we may contact him.—*Randolph Products Company.*

55-Gal. Drum Roller

We are interested in finding out where or from whom we can get a floor-type 55-gallon drum roller.—*B. T.*

Try Morse Mfg. Co., whose advertisement appears in every issue of this magazine.—*Editor.*

No; It's TUMB-L-MATIC

I would like to call your attention to one of the Letters from Readers on page 86 of July issue headed, "Tumbling Equipment."

The article states that the name of the Lupomatic Co. was changed to Lupoline Automatic Polishing Equipment Corp.

This statement is not correct, and could do us considerable harm.

The name "Lupomatic" for use in any form was sold to Lupomatic Industries, Inc. (now TUMB-L-MATIC, Inc., of Stamford, Conn.) for its exclusive use in 1949.

From the explanation above you must agree that the article should have stated that the name Lupomatic was changed to Tumb-L-Matic, Inc.—*Joseph M. Ashmore, President of Tumb-L-Matic, Inc.*

Metal Crack Filler

Please tell us the names of a few manufacturers of filler material for cracks, grooves, scratches, etc., on sheet metal panels. The filler should

be suitable for use prior to painting and baking.—*A. K. Ltd.*

In a letter we are listing the names and addresses of eight manufacturers of such material.—*Editor.*

Flow Coating Machine

Please send us a complete list of manufacturers of flow coater equipment.

Specification: One flow coater to coat wooden surfaces with flowing paint. This machine can be laboratory size, and coating can be done by rolls. Descriptive literature, in four copies, we will welcome.—*H. Products Corp.*

"I got a problem of orange peeling down at the plant!"

Prefinishing Plywood Panels

In June issue, page 76, we notice a request from a Colombia, South America reader for information on finishing systems for prefinished plywood panels.

We make complete plywood upgrading lines for clear or printed films of vinyl, polyester, polypropylene, etc. We have done considerable work in this field over the last three or four years, and have several lines in operation now for that same period.

If you will furnish us with this individual's name, we will be happy to forward information on our plywood up-grading lines, as well as our coating lines. Also, if you are interested, we would be very happy to furnish you the same information.—*C. A. Litzler Co., Inc., Cleveland.*

Articles in June Wanted

Would you please send me three reprints of the article entitled, "Dip Coating," beginning on page 20 of June 1959 issue of your magazine? Also, two reprints of the article entitled, "Flamboyant Finishes; How to Use Them," beginning on page 93 of the same issue. They are both extremely interesting articles.—*L. A. J. (Technical Sales Representative).*

Burn-in Repairs

Please send me the names of suppliers of "Burning-in" materials for repairing scratches and damaged places on furniture.

Also, send me all information possible on their application procedures.

Several of my cabinet customers would like to adopt a "burning-in" system for repairing cabinets.—*R.G.L.*

In a letter we are naming sources of supply for burn-in materials and supplies.

We have an excellent book that covers the methods used in burning-in, which we sell for only $2.75. More information about it appears in an advertisement in July issue, page 128.—*Editor.*

Be Careful of Extra Film Thickness or Build

IN RECENT YEARS particularly with the increase in advertising regarding hot spray equipment and processes, attention of the industrial finishing industry has been directed toward the "build" or thickness of the coating film. Prior to the advent of hot spray only varnishes or synthetics could give a high enough solids to produce films of substantial thickness. The advent of hot spray placed nitrocellulose lacquers into this category also.

The trend now appears to be headed toward even greater thickness aimed at producing with an organic coating what today can only be accomplished by plastic lamination. Naturally enough at the present time a multiple number of coats are required to attain this result. However, where possibly a year ago five coats were the normal prerequisite, in many cases this is now being achieved by only three or four coats. Each lacquer or enamel manufacturer is continually striving to obtain a greater film thickness per coat. Quite obviously with the high cost of labor, any reduction in operational procedure will afford a savings far exceeding the relatively low rise in cost of the paint material. Therein, however, lies the area of possible future potential failure.

In lacquers or synthetics which dry solely by evaporation of volatile solvent, it is possible to keep the film "open" and produce excellent sol-

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vent release. This is accomplished in many cases within the formulation by use of a plasticizer.

The use of coating materials which dry by polymerization or oxidation offer a far more complexing problem. While it may be possible to keep the film "open" enough to allow solvent evaporation, once the volatile portion has disappeared, the top film seals off the bottom. Thus the surface in immediate contact with air will cure to a hard film. The under portion will however remain soft for an extended period and possibly never reach the stage of full polymerization. In some instances it was found that solvents and/or uncured materials trapped in the pores of the wood substrate actually destroyed the adhesion of the coating to the wood.

The inherent danger then is to attempt to overextend the build of a given coating. It is well known that one of the easiest ways to accomplish this is to spray on a horizontal surface allowing the film to flow out smooth and without sags and runs which normally occur on a vertical surface, when an abnormally heavy coat has been applied.

Each manufacturer has undoubtedly evaluated his material for the highest possible build. It is to his advantage to attain the maximum and most of the time his recommendations are to the maximum. To exceed his recommended thickness is to openly court disaster. Numerous completely dry coats are certainly more advantageous than a lesser number of wet ones.

Recoating time is another danger in high build systems. Not enough cure time between coats may have the same effect as one heavy application. The thorough dry of the film may be drastically impaired. Many finishers feel that a tack free surface is the sign for recoating and hence jump the gun. As we pointed out previous-

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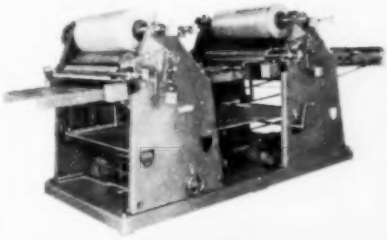

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ly, a cured surface makes no guarantees for the under portion.

All told, the heavy system which is desired in some places, is frought with many dangers. It cannot be too highly emphasized that manufacturers recommendations should be followed to the letter. We have seen too many instances where deviations retard desirable results. It is usually very annoying to strip heavy buildups of industrial finishes.—*G. N. Norman.*

Gold Decorative Effects On Furniture

THE USE of gold for decorating certain types of furniture and other products adds much to its appearance and value. In furniture, for instance, leather top tables and stands have long been decorated with an embossed border design in 23-karat gold leaf.

The gold leaf is applied and embossed at the same time. In roll form it feeds down and under a brass embossing wheel; the operator applies pressure on the wheel as it is rolled along on the leather top. If necessary, a wood guide strip may be used to help keep the embossing wheel traveling in a straight line. Real gold leaf requires no protective clear coat; it will not tarnish. However, a clear coat of leather lacquer is generally applied to provide a clear protective film over the gold embossing and thereby protect it against the direct wear of hard service.

Certain types of furniture finishes can be enhanced with gold leaf. An example

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of this is antique white in which a ¼-in. gold stripe is applied around the moulded edge of the top, in shallow coves or grooves in drawer fronts and in posts. For production work, a *synthetic guilder's oil* is applied by brush in the clean, well sanded, finished moulded shapes. The oil will become tacky in about 20 to 30 minutes, whereupon the gold leaf (in roll form) is pressed onto the tacky surface by hand, using the thin paper separator in the roll for this purpose.

For a more brilliant gold, regular guilder's oil can be used instead of the synthetic oil. However, the genuine guilder's oil will require from 12 to 16 hours air drying time before it becomes tacky enough to apply the gold leaf, hence it is seldom used in production finishing. The gold decoration should air dry overnight before either a flat or semi-gloss lacquer is sprayed on. Again, this clear lacquer coat is applied only to protect the gold against wear.

It is possible to get gold leaf (23-karat) which requires neither conventional nor synthetic oil for application. The leaf comes with a paper backing similar to a decal, and it can be applied to almost any clean, smooth surface by pre-soaking it in water for about 30 seconds. This type of gold leaf is generally applied to a lacquered surface before the final lacquer coat is put on. Any monogram or design can be drawn on the paper backing and then cut with a sharp stencil knife. The cut-out design is then placed in water for about 30 seconds and applied directly to the surface, the same as a decal. If the design is intricate, it may be advisable to divide the design into two or more sections for application. Overnight air drying should be allowed before the final top coat of lacquer is applied. [*To page 98*]

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This type of gold decoration is not confined entirely to furniture or wood products. It can be used on metal, glass, plastics, composition board and parchment paper, such as is used for lamp shades — in fact, any clean, smooth, sealed surface.—*M.T.*

Rel-Rez Division Announced By Reliance Varnish Co.

The Reliance Varnish Co., with main offices at Louisville, Ky., and other plants in Bridgeport, Conn.; High Point, N. C.; Los Angeles, Calif. and North Chicago, Ill., announces the establishment of the Rel-Rez Division as of July 1, with headquarters at Louisville and under the management of Harold S. Julsrud.

Howard C. Woodruff has been made Technical Director of this Division. Both Mr. Julsrud and Mr. Woodruff were formerly with Alkydol Laboratories in Cicero, Illinois.

Reliance has operated a resin plant in Louisville for several years and now proposes to market its alkyds, both pure and modified, epoxies, polyesters, copolymers and other coating resins on a nationwide basis, with the trade name Rel-Rez.

James S. Stevenson is Sales Manager of the Rel-Rez Division. Mr. Stevenson has been Eastern Regional Sales Manager of another resin manufacturer for the past several years.

American MonoRail Distributor

The Erie Industrial Supply Co., 1616 W. 8th St., Erie, Penna., has been appointed as distributor by the Conveyor Division of The American MonoRail Co. The new distributor will handle exclusive sales of American "Cable-Way" and American "Chainless" conveyors within its territory. Principals of the Erie Industrial Supply Co. are D. B. Schuler and T. Bower.

Hobbs, V.P. of Enterprise Paint

Harley B. Hobbs, Advertising Director of The Enterprise Paint Mfg. Co., Chicago, Illinois, has been elected a Vice President of the company. Patrick Anderson advances to the post of Advertising Manager.

Job Finishing Shop Uses Three Kinds of Conveyors

How does your product move through the plant? Do you still 'manhandle' it? Perhaps you will say, "Our product cannot be handled too well on conveyors". One thing should be remembered, everytime either raw materials, parts in process or finished products are picked up and placed on trucks or on the floor, production costs rise. Time is consumed in loading and unloading. The oftener this is repeated, the greater the cost will be.

There is a conveyor for nearly every type of product, and for practically every plant lay-out. Some conveyors are power driven, others operate by gravity, while still others are manually operated. In some cases the three types may be combined in one system.

Recently I was in a job finishing, or custom shop where many different sizes and kinds of products are finished with various types and kinds of finishing materials. Both the products and the finishing materials changed from time to time, sometimes daily. Different products as well as different coatings require different baking periods and temperatures. For this, batch type ovens are imperative.

This shop used all three kinds of conveyors, power driven, gravity and manually operated. In the electrostatic booth there is an overhead monorail conveyor which continues outside the booth to pass through a combination infrared electric

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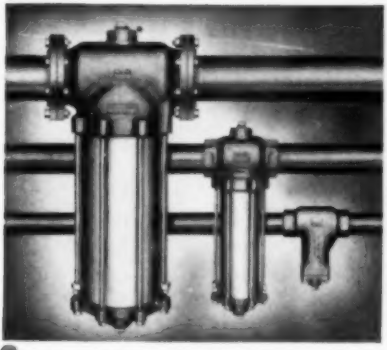

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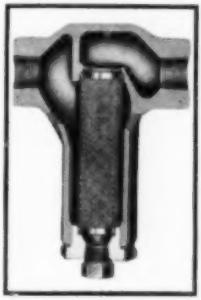

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and convection oven. In the electrostatic booth, immediately under the overhead conveyor there is a spindle type conveyor raised about 18-in. off the floor. The spindle conveyor operates only in the booth. As finished parts come around to the front of the booth, they are transferred to another overhead conveyor which carries them through a convection oven. For suitable products of the same color, this doubles the capacity of the electrostatic booth.

For this type shop, batch type convection ovens are a must. All of the batch ovens are serviced by a series of overhead monorail conveyors, manually operated. The main line passes adjacent to a series of spray booths. Freshly coated parts are placed on tiered racks suspended from the overhead conveyor. As racks are filled, the conveyor operator pushes them forward onto a 'side' or storage track. The batch type ovens have doors on both ends so that baked parts move out as coated parts are pushed into the oven.

Gravity conveyors carry the empty racks from the unloading to the loading station. Short sections of gravity conveyors are also used between two spray booths where certain parts must receive two spray operations.

This firm found that production increased and costs were reduced by keeping the product on the move through the plant.—*C.P.B.*

Edman is Made G.M. of Sewall

Ben Francis Edman has been appointed to the general managership of Sewall Paint & Varnish Co., Kansas City, Mo., a division of American-Marietta Co.

For the past three years Edman has served with The Arco Division of American-Marietta as Production Finish Sales Manager. His new position with The Sewall Co. is a tribute to his managerial ability, and to his wide knowledge of paint products.

Moisture in Air Lines? Aftercooler Removes It

IT IS SURPRISING how many industries have trouble with compressed air. Far the worst offender is water and oil contamination of the air. Very often the entire system is inadequate for the demands made upon it; sometimes the reason is that the compressors are wearing out, or the installation was of poor design.

On the other hand, however, sometimes a large outlay is made for a well-engineered air system—one apparently sufficient for all future needs. Yet, a year later the same old troubles show up; oil and water vapor spurt from each spray-gun or dusting gun, where only clean air can be tolerated. In this case the fault is a tribute to the usefulness of air; as more became available, more air equipment was added, and soon the adequate air became inadequate once more.

When oil and water appear the first reaction is to blame the trouble on failure to drain separators or filters. The second is to install extra or larger filters. While filters are capable of doing a limited job, under certain conditions an overworked compressor can pump more contamination than all the filters in the world could remove.

A more effective device for this moisture removal is an after-cooler—a water-cooled heat-exchanger which is installed between the compressors and the storage tanks. Heat is the real enemy of efficient air compressing—until the air is cool enough to condense and drop its moisture there

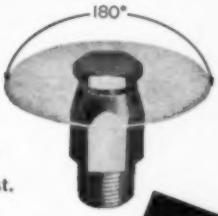
EXCLUSIVE*
with Steinen

New Nozzles

TAN-JET
SOLID CONE NOZZLES

Non-clogging nozzles having a uniform solid-cone spray pattern, furnished in brass, steel, 303 stainless or other suitable materials for any application or process which involves spraying of fluids.
Sizes ¼"—⅜"—½" male or female conn.

*SPAN-JET
FLAT SPRAY NOZZLES



For spraying or washing inside of tubular units or other uses where a circular wide-angle spray is needed. Made in two patterns — 160° hollow-cone spray or 180° flat — circular spray. Available in brass or 303 stainless steel — others on request.
Sizes ⅛" — ¼" — ⅜" male conn.

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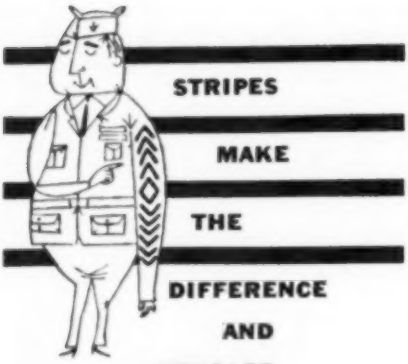
SERVING INDUSTRY FOR MORE THAN FIFTY YEARS

For more data, circle 197 on colored card.



MAKES THE DIFFERENCE IN STRIPING

A Beugler Striper is the professional choice, yet it's so simple a child can use it. 22 years' experience manufacturing striping tools exclusively has made Beugler the absolute criterion of striping instruments. When you buy a paint striper, buy the best—Buy a Beugler.

STRIPE FOR DECORATION OR IDENTIFICATION

Three Models—Fourteen standard size stripes from which to choose. 1/32 to 1/4 inch. Also many special stripes, concave, convex and double stripes.

Craftsman Model $6.45
2 size stripes—Single guide holder

Deluxe Model $10.00
3 size stripes—Double guide holder

Jumbo Model $14.50
2 size stripes—Double guide holder

2,000 Dealers to serve you—your paint store or auto parts house can supply Beugler products. If no dealer near you, send your order direct or write for literature and information.

BEUGLER MANUFACTURING CO.
4312 W. Second Street, Los Angeles 4, California

For more data, circle 229 on colored card.

is no device that will remove it. Thus, the after cooler, functioning to cool the air, not only forces it to drop its moisture in the tank but, eventually cools down the tanks and the entire area. Ultimately, this cooling cycle benefits the entire system, being often a shot in the arm to old, tired compressors.

Considering the job they do, aftercoolers are not excessively expensive and are easy to install. Water requirements are modest for in some cases the water can be reused for other purposes. A word of caution, however is in order; err on the side of too large, rather than too small.—*G.C.*

"Dy-Chek" Quickly Finds Flaws in Metal

SOMETIMES a metal shop has to make certain that a tank or casting or other metal item is free from flaws, cracks or crevices before painting it. In the past, special lights, booths or an electric current have been employed; and the operator had to have some technical ability.

Today there is a very simple method which can be used by an unskilled worker, and which will almost instantly detect very small hidden flaws in a metal surface. Very simply stated, it is a red penetrating dye called Dy-Chek which is applied to the surface and which enters even the finest hair line cracks. This dye drys quickly. Then the surface is wiped clean to remove the dye. Next a so-called "developer" is sprayed or brushed on the surface—or even applied by dipping the work. This coat it white. What happens then is that any dye which has penetrated into a flaw in the metal "bleeds" out and shows red; it clearly reveals the exact shape and size of the blemish. The location for any weld or other

corrective treatment is precisely indicated. This process is simple; all that the operator needs is to be able to distinguish white from red. The process is applicable to a dip tank operation or a portable spray unit. Many shops could find use for this process.—*C.B.R.*

Dr. Miranda, Dir. of Research at O'Brien Corporation

A new Basic Research Department has been established at the O'Brien Corp.'s South Bend plant, and Dr. Thomas J. Miranda has been appointed as Director of Basic Research. Under Dr. Miranda's supervision, the entire facilities of this new department will be devoted exclusively to research work.

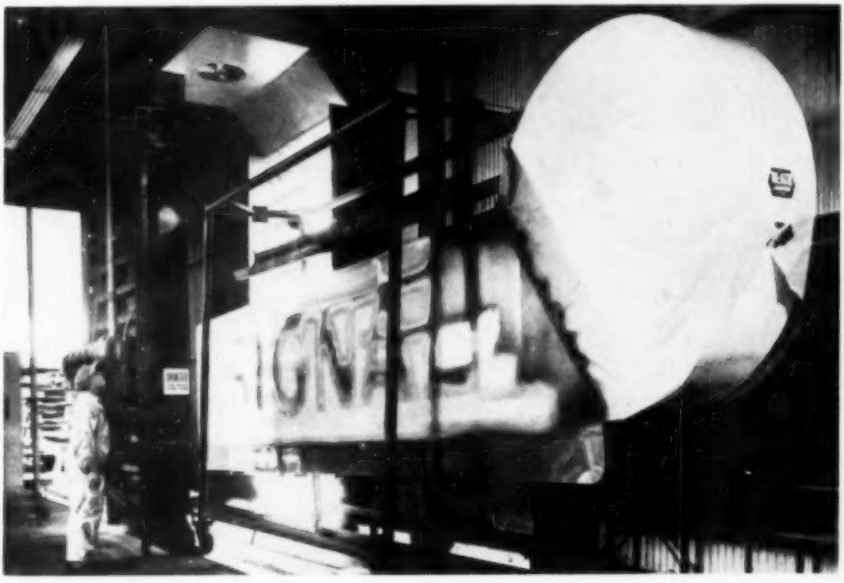
The department was created because of the need for long range development work on new decorative and protective finishes and coatings for home and industry. Dr. Miranda is a member of the American Chemical Society and resides in South Bend, with his wife and three children.

Sign Co. Uses Infrared To Dry Painted Work

ONE of the major problems in the sign industry today is to quickly dry the paint on its painted signs, some of which are very large. Heath & Co., one of Los Angeles' major sign manufacturers, has solved this problem satisfactorily by installing a vertical infrared oven to speed up the drying of paint on new signs. Within minutes after multi-color signs leave the infrared oven, they can be loaded on a truck for delivery, or they can be moved to the plant's storage area.

The speed-up in drying time is especially desirable now since the company makes about 60 colors available to its customers, and as many as 12 colors may be used on a single sign. Each color must dry thoroughly before a succeeding color is applied.

A 35% speed-up in production is



A big sign cradled in a high-framed dolly, moves through the infrared drying facility.

New, Enlarged 2nd Edition

THE NEW enlarged second edition of George A. Soderberg's excellent fast-selling book, "Finishing Materials and Methods" is now ready. It contains 382 beautifully printed pages 6x9-in., 225 illustrations, and is divided into 36 chapters. In the last 12 pages, all subjects in the book are alphabetically indexed. The book is substantially and attractively bound with the front cover design printed in three colors—light blue, black and red.

The first 24 chapters, all illustrated, take up materials—everything used in finishing—paints, varnishes, enamels, lacquers, synthetics, shellac, stains, fillers, bleaches, multicolor finishes, hammer-effect and wrinkle materials, luminescent paints, wax, polish, flock, tack cloth, tape, abrasive paper, varnish remover, etc.

The remaining chapters, also well illustrated, take up all finishing methods, for example, dipping, spraying, flow coating, roller coating, tumbling, electrostatic and drying. One chapter deals with the important subject of color; another offers "Safe and Recommended Practices in the Finishing Department."

Price $5.00—Money Back Guarantee

INDUSTRIAL FINISHING

1142 N. Meridian St. Indianapolis 4, Ind.

reported—using the new radiant drying system. Other problems, including that of dust settling on "wet" signs, have also been eliminated.

Heath & Co.'s present finishing system includes a modern spray booth and a drag-chain conveyor placed at floor level. The latter is designed to pull sign dollies and holders through the oven at various speeds.

Since the company's line of products includes small units, as well as signs ranging up to 80-sq.ft. in surface area on one side, the oven is wired by zones to permit use of all or part of its total radiation surface.

Acknowledgment: Story and photograph supplied by Fostoria Pressed Steel Corp., Fostoria, Ohio.

Wisc. Protective Coating Co.'s Out-of-State Representatives

Wisconsin Protective Coating Co., Green Bay, Wis., announces the appointment of new direct factory representatives in various areas of the country as follows: Allegheny Tool Co., 3201 Smallman St., Pittsburgh 1, Pa., to cover western Pennsylvania; R. J. Swanson Co., 6272 W. North Ave., Chicago 39, Ill., to cover the northwest three counties of Indiana, northern Illinois and counties of Iowa bordering the Mississippi River; Thomas J. Reese Co., 2127 20th St., Cuyahoga Falls, Ohio to cover the counties in northern Ohio.

Corrosion Problems Will Be Subject at NACE Meetings

Coatings to prevent corrosion will be discussed at four regional meetings of National Association of Corrosion Engineers. The meetings will be held this fall in California, Florida, Maryland and Ohio.

Six papers devoted to coatings will be presented at the northeast regional meeting in Baltimore, Oct. 5-8.

Two papers on coatings will be presented at the western regional meeting, Bakersfield, Calif., Sept. 29 to Oct. 1. One paper will be presented in the gen-

eral corrosion symposium, the other in the chemical processing symposium.

A symposium on protective coatings will be held at the north central regional meeting in Cleveland, Oct. 20-22. Testing paint systems and specialty coatings are the subjects of two papers to be presented.

Additional information about the meetings can be obtained from National Association of Corrosion Engineers, 1061 M & M Bldg., Houston 2, Texas.

Blakeslee Opens Two New Shipping Points

G. S. Blakeslee & Co., Chicago, Ill., recently added two new drumming and distribution centers for its Blacosolv trichlorethylene degreasing solvent, at San Pedro, Calif., and Carteret, N. J.

The California shipping point will serve west coast locations. The Carteret plant will ship to eastern states.

What Joe the Chemist Says And What He Thinks

DEAR EDITOR: You are probably aware that sometimes a young chemist overhears various conversations between customers, salesmen and laboratory personnel, and forms his own ideas as to just what is taking place.

We have a student chemist who put down his thoughts on the above in his own way. The following gives you his ideas; we thought you might be interested in it.—*Finish Mfr.*

What Joe is Saying	What Joe is Thinking
"Yes sir! You should get that shipment today."	If your luck holds it may leave here next week.
"That batch is almost close enough to ship."	Must tell the plant to start that job tomorrow.
"That Smith job looks good."	What Smith job?
"It's in the oven."	That will get him off my back for 20 minutes.
"It's flashing."	Forgot to spray it.
"Sure we can handle another lab. job."	This guy would throw a drowning man an anchor.
"Sure Jack, we'll get 2 gallons of thinner out to you."	$20,000,000 business, hell!
"First thing in the morning."	Don't hold your breath.
"I'll get right on it."	Sure I will.
"Can't find the retained sample."	Spilled the damned thing.
"We'll take the viscosity and ship it."	I'll order the raw materials.
"Damn paperwork."	&$%!?!*! paperwork.
"Coffee man."	Thank the Lord.

—By Joe, the Laboratory Chemist.

● SUPPLIES
● MATERIALS
● EQUIPMENT

Spee-Flo Airless Spray Unit

HydraAirless 20 is a simple, versatile airless spraying unit brought out by the Spee-Flo Co., 6614 Harrisburg Blvd., Houston 11, Texas. It is designed to serve a wide range of spray operations where the prevention of overspray is desirable. This unit makes it possible to spray in open areas without a spray booth. No atomizing air or heat are required—and no elaborate precautions need be taken for health or safety. Overspray is practically non-existent. Material savings average 40%.

A feature of the new unit is the ease of conversion from standard unheated airless spraying to full temperature and viscosity control. This is accomplished by the quick attachment of a Spee-Flo heater and recirculating assembly to the basic unit.

Spee-Flo's HydraAirless Spray No. 20.

The new HydraAirless 20 is engineered to give the user efficiency, long service life and trouble-free operation. The double-action pump gives equal delivery on both up and down strokes. Super wear resistant working parts and tungsten carbide valve seats guarantee long service life. The air motor is fully divorced from the pump, allowing no paint material to reach the motor. This assures smooth operation. All models are available in fixed or mobile units for 5 or 55-gallon requirements.

For more data, circle 1 on colored card.

New Automatic Spray Gun; Extension Mounting

To bring the nozzle closer to the work, where space is too limited for mounting the complete nozzle assembly, Spraying Systems Co. offers a new AutoJet Spray Gun with extensions for hydraulic spray coating. A wide choice of interchangeable orifice tips permits selection of desired capacities and spray patterns. Extensions are supplied in 8-in., 18-in. and 24-in. lengths; special lengths are available as specified.

The valve stem extends through the extension and the valve seat is positioned immediately behind the orifice tip to provide drip-free, instantaneous shut-off. Liquids are sprayed by hydraulic pressure at recommended pressures up to 125-

Lengths, 8 to 24-in. for hydraulic spraying.

psi. The shut-off valve mechanism is air operated at 70 to 100-lbs. pressure and provides automatic on-and-off spray nozzle operation at any required cycling frequency.

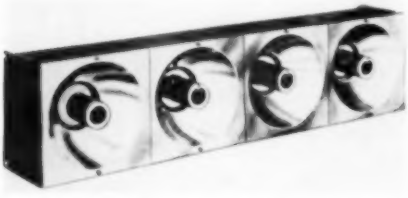
The unit is designed so that liquids do not come in contact with the air operated control valve assembly. Extension, valve seat assembly and tip are easily cleaned by flushing with solvents. For more information on these AutoJet Spray Guns, write for Data Sheet 8286 to Spraying Systems Co., 3240 Randolph St., Bellwood, Illinois.

For more data, circle 2 on colored card.

High-Heat, Ceramic-Type Infrared Units

A new 1000-watt, lava-coated, ceramic-type electric infra-red generator is offered by the driQuik Division of the Dry Clime Lamp Corp., Greensburg, Indiana.

The new driQuik generator makes possible the use of infrared ovens that produce higher heats than were possible before, and ovens which are capable of handling jobs that were not possible before. In many drying and baking operations, small, less costly ovens can now be used, with an increase in production.



Four 1000-watt generators in oven section.

Industries have been offered a choice of 500, 650 and 750-watt driQuik infrared generators for several years, but the development of successful 1000-watt generators required a great deal of additional research due to the higher heat involved. In some specialty ovens, temperatures of 900° F. have been reached.

Temperature is controlled accurately in each section of the oven by means of cyclical temperature controllers, making possible varied product production with different heat finish requirements in the same oven. The temperature in each zone can be set from 0% to 100% of its rated power. The driQuik generators are unaffected by vibration, jarring, vapors or moisture.

For more data, circle 3 on colored card.

Cold, Dilutable Stripper For Epoxy Enamels

A cold, chlorinated liquid stripper for epoxy enamels, which can be diluted with up to 20 parts by volume of water, has been developed by Enthone, Inc., of New Haven, Conn., subsidiary of American Smelting & Refining Co. Described by Enthone as a major breakthrough in the stripping of baked synthetic enamels, the new dilutable product, called Stripper S-26, performs all of the functions of presently employed cold chlorinated strippers which must be used full strength. With the new product stripping costs are substantially reduced and evaporation losses are minimized without sacrificing the advantages of room temperature stripping.

Stripper S-26 is acidic in nature and non-flammable. It is used at concentrations of one part stripper to from 4 to 20 parts of water by vol-

ume. It is operated at room temperature and acts by wrinkling and detaching the enamel from the metal. New, hard-to-strip epoxy coatings are removed from most metals including steel, aluminum, copper, brass and zinc die castings. The product is also effective for stripping plastisol coatings from racks.

The stripping solution is readily maintained by periodic additions of Stripper S-26. Since the stripping solution wrinkles the coating instead of dissolving it, it does not become contaminated with dissolved enamel and has long life.

For more data, circle 4 on colored card.

Two-Headed Spray Gun Has Many Practical Uses

A two-headed spray gun has been developed by Binks Mfg. Co., 3116 Carroll Ave., Chicago 12, Ill. It is designed primarily for the application of polyester resins where the accelerator mixture must be brought into contact with the catalyst mixture just before the mixture is sprayed. The gun can also be put to other uses. An example is in spattering or veiling, where two different materials can be sprayed with each pass of the gun. The gun can be used for almost any 2-component finishing system where perfect mixing is not required, or where pre-mixing is impossible or impractical.

One setup, wherein the 2-head spray gun is used, calls for the use of two pressure containers—one for each material.

Close-up view of the 2-head spray gun shows 3-hose arrangement, single trigger action.

The gun, Model 181, uses standard Binks Model 18 gun nozzles. Users may specify air and material nozzle sizes when ordering to suit their individual requirements. Some applications may necessitate the use of two different size nozzles, depending on the viscosity of the material being sprayed and the ratio of material quantity.

Gun body is of drop forged aluminum. Gun heads are ordinarily of drop forged bronze, but stainless steel heads are available. Needle stroke is controlled at the gun handle, as with standard guns, and spray patterns of each gun may be regulated from round to fan, with any intermediate configuration.

Three hoses, two for material and

one for air, are used with the gun. Normally, two pressure tanks are used to supply equal pressure to each head, but different pressures can be used.

For more data, circle 5 on colored card.

Automatic Machine Paints 1, 2 or 3 Surfaces of Masked Parts

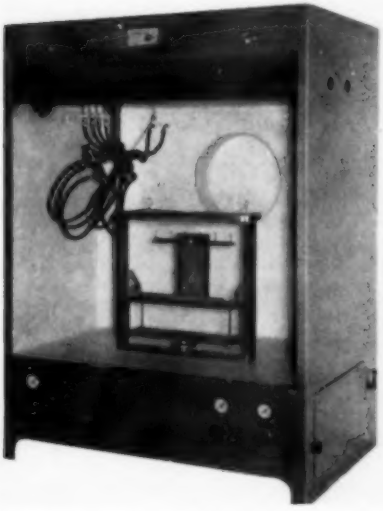
An automatic spray machine that paints one, two or three surfaces of generally oval or rectangular shaped pieces of varying length, where fine mask definition and paint demarcation are imparative, has just been developed by Conforming Matrix Corp., 331 Toledo Factories Bldg., Toledo 2, Ohio. The length and speed of the painting stroke are adjustable within the limits of the size of the model selected.

An exclusive device permits tilting of the overhead traveling guns in one or two directions as well as the painting in both directions when the part is in painting position. Paint coverage is assured under all mask bridging, and hard-to-reach recessions, corners and edges of the part, with a reduction in overtravel and a saving of paint. This tilting mechinism also permits the designing of machines of reduced length. The guns can be set to remain motionless.

Standard gun mounting rods may be used on the single vertical fixture machine, which is known as Model SVF. The square shaft vertical fixtures alternately lower and raise the part, placing it snugly in the mask for painting. The fixtures are adjustable so as to paint a wide range of different sized parts.

Entirely air operated, the SVF is housed in its own booth which can be connected with an existing exhaust system—or a fan and motor can be supplied as extras, if necessary. Air filtering, cylinder and air valve lubrication and water trap ejector are all automatic.

For more data, circle 6 on colored card.



This spray machine is 54x36x75-inches high.

Non-Inflammable Waterproof Flocking Adhesive

Adhesive Products Corp., 1660 Boone Ave., New York 60, N. Y., announces the development of Resgrip WP, a new non-inflammable waterproof flocking adhesive. This adhesive is excellent for making pennants, insignia, signs and for applying flock in the manufacture of decorative fabrics. It can be applied by machine or silk screen.

The new adhesive dries transparent and is non-staining. When dry, it is extremely flexible, resulting in a product which does not have the usual harsh feel characteristics. Products made with Resgrip WP can be washed in boiling water or dry cleaned.

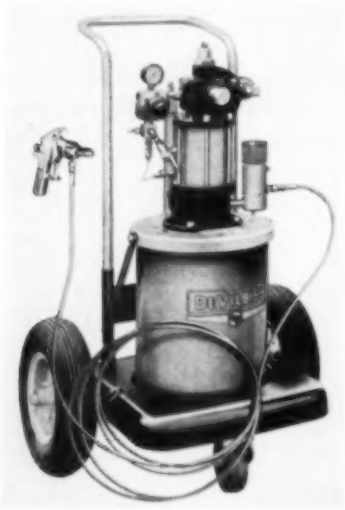
For more data, circle 7 on colored card.

Airless Spray Painting Unit By The DeVilbiss Co.

Introduction of airless spray painting equipment is announced by The DeVilbiss Co., Toledo, Ohio. As an adjunct to the company's regular spray equipment, including a wide variety of *units for hot and cold application*, the airless method provides specific advantages for certain spray application and thereby constitutes an important supplement to the DeVilbiss line of products.

An example of a typical application is the spray painting of heavy machinery, interior structures and other surfaces where exhaust facilities for the removal of vapors and overspray are either very limited or nonexistent.

On exterior painting, the airless method permits rapid coverage with wide spray patterns, without creating excessive mist and rebound. The fact that the spray pattern produced by the DeVilbiss airless gun has unusually sharp, clean edges, masking and shielding on most "rough" work can be largely eliminated.



It is compact, smooth operating, safe, with or without heat, and can be used in fixed or mobile units; 5 or 55-gallon containers.

The new DeVilbiss airless unit features a high production gun and pump for a rapid rate of coverage and excellent spray results. It can handle light or heavy bodied material, giving sharp edges and heavy, even coats, while conserving material. A single fluid hose to the gun provides maneuverability for hard-to-paint areas.

The unit is portable, and consists of pump, cart, tank, lid, air-motor-driven agitator, elevator to raise the pump when changing material containers, wire braid reinforced Teflon lined hose and airless spray gun with Tungsten carbide spray cap.

The principle of airless spray is the forcing of material through a small orifice (.011 to .018 inner dimension) at pressures of from 1800 to 2400-lbs. per square inch. When the material is suddenly released from this high pressure, it expands and breaks into small particles. These atomized particles have enough forward velocity to carry them to the surface, but not sufficient force to rebound.

In airless spraying, the material is applied much wetter than in conventional spraying, since there is no air to vaporize portions of the solvent. Flow-out is generally excellent; with

"GRIPALLOY"

. . . Attractive satin sheen primer in black and colors . . .
. . . Amazing tight adhesion to 25 different metals as reported by a large electrical manufacturer . . .
. . . Excellent resistance to Salt Spray, Gasoline and Solvents.

TENAX, NEWARK 5, N. J.
Lacquers—Enamels
Synthetics—Varnishes

For more data, circle 230 on colored card.

some materials it may be necessary to rebalance the solvents, using faster thinners to compensate for this reduced vaporization.

Demonstrations of the new DeVilbiss airless system can be arranged through any of the company's factory branches, representatives and distributors from coast to coast.

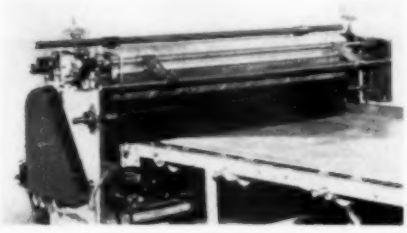
For more data, circle 8 on colored card.

Morrison Graining Printer

The new Model P-28-50 Panel Printer prints authentic wood grain reproductions on 4x8, 4x10 and 4x12 panels at rates up to ten panels per minute. Materials such as plywood, hardboard, particle board, etc., can be finished at a fraction of the former cost of applying conventional finishes. Advanced features in the new Morrison Printer achieve high speed, high fidelity reproductions of mahogany, walnut, oak and other popular and exotic wood grains, rivaling the beauty of natural woods.

Smaller panels and such items as doors, cabinet parts, etc., are easily accommodated on the standard machine.

To meet modern production needs, the machine has extra built-in rigidity and durability, and has been shown to be practically maintenance-free. Cylinders are precision ground to close tolerances, have micromatic adjustment and are self-aligning. Var-



Reproduces wood grain on wide panels.

BOOKS On Finishing Available

"PROTECTIVE COATINGS FOR METALS," (643 pages)	12.00
"ORGANIC COATING TECHNOLOGY," Vol. 1	13.50
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"THE MIXING OF COLORS AND PAINTS" (292 pages)	3.00
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"THE SCIENCE OF WRINKLE FINISHING" (204 pages)	5.00
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"RESTORING AND MAINTAINING FINISHES" (58 pages)	2.75
"INDUSTRIAL FINISHING AND COMMON SENSE" (335 pages)	9.00
"FINISHING MATERIALS AND METHODS", new (382 pages)	5.00
"ENCYCLOPEDIA OF THE CHEMICAL PROCESS INDUSTRIES" (820 pages)	12.00
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"SCIENTIFIC PAINT EVALUATION," (321 pages)	9.00
"FILM FORMATION, FILM PROPERTIES and FILM DETERIORATION" (430 pages)	9.75
"INDUSTRIAL DETERGENCY" (340 pages)	8.75
"SURFACE COATINGS AND FINISHES (299 pages)	9.00

Cash Must Accompany Order—
Send for Descriptive Catalog

INDUSTRIAL FINISHING
1142 N. Meridian St. Indianapolis 4, Ind.

iations in thickness or flatness of the work are taken care of automatically.

A notable feature is a printing cylinder composition which is virtually unaffected by temperature or humidity variations, thus eliminating the need for air conditioning.

The printer embodies a unique combination of gravure and flexographic design and can handle work ranging from fine screen gravure to a wide variety of rubber plate impressions. It is made in several sizes up to 70-in. wide. Multi-color arrangements are available.

This is a top printer and can therefore be utilized for fully automatic operation with the infeeding and outbearing handled by conveyors, thereby eliminating operators at the machine. Accessory process equipment such as conveyors, dryers, coaters, etc., is designed and furnished by this company. M-H Standard Corp., Conveyorized Finishing Systems Div., H. H. Morrison, Director of Engineering, 515 Communipaw Ave., Jersey City 4, N. J.

For more data, circle 9 on colored card.

Prepares Steel For Paint

Announcement is made of a product called Interlox, a pre-paint treatment for steel, with built-in cleaning power and activators. The phosphate coating is deposited dense and impervious on clean steel, leaving no powdery coatings on poorly cleaned surfaces.

Combination cleaning and phosphatizing reduces your cost two ways. Separate cleaning is not always necessary. The built-in cleaning power of Interlox can be maintained by additions of detergent only, eliminating the addition of phosphating compound when better cleaning is needed, thus removing the danger of over phosphating.

For a descriptive bulletin, write Northwest Chemicals Co., 9300 Roselawn, Detroit 4, Mich.

For more data, circle 10 on colored card.

Watco Natural Wood Finish; Oil and Resin Process

A new natural wood finish called "Watco" will be introduced at the NAFM Supply & Equipment Fair by The Watco-Dennis Corp., of Santa Monica, California.

The manufacturer describes the new Watco natural finish as a *super-penetrating oil and resin process* developed for oil, flat and Danish type finishes. It is non-inflammable and non-toxic.

The new finish is a deep penetrating liquid compound that bases its performance on polymerization within the wood itself. Wood units

PROTECT LUNGS against PAINT SPRAY – DUST – FUMES

DUPOR No. 4 RESPIRATOR has big double filters for easy breathing and greatest filtration! Soft rubber face mask gives airtight fit. Patented DUPOR valves bring in clean air—throw off breathed air! Weight 4 oz. Economical! Costs only $2.00 postpaid. Order Now!

H. S. COVER, Dept. 810 South Bend 14, Ind.

For more data, circle 198 on colored card.

finished with Watco appear to have all the elegance of a rubbed linseed oil finish. However, there is no oily response to the touch. The wood feels dry and satiny. The surface is non-printing and will never gum-up in warm temperatures.

Normal sanding, staining and filling are suitable in preparation for a Watco finish. Watco application may be completed with just two basic steps—saturation and drying. Polymerization (a change from a liquid into a resilient solid) commences immediately after the liquid comes into contact with the wood. Complete polymerization is not accomplished for at least 24 hours. However, the wood can be handled within minutes after the initial application without harming the finish.

Since *the finish is in the wood and not on the surface,* maintenance is easy. Finish damage is quickly and simply repaired with spot-sanding and light re-application of the Watco oil. No lap marks or discoloring will result.

Complete information on the new natural finish is available from the Watco-Dennis Corp., 1640 20th St., Santa Monica, Calif., or its distributors. Production finishing will be demonstrated at the Watco booth during the NAFM Supply Fair, Chicago, Aug. 29 through Sept. 1, 1959.

For more data, circle 11 on colored card.

Improved Electrolytic Cleaners

Detrex announces the introduction of a new line of electrolytic cleaners for the removal of soils from aluminum and aluminum alloys, zinc, steel, brass, copper, nickel, etc.

The high alkalinity of the new Detrex electrolytic cleaners gives maximum saponification when not preceded by other cleaning methods. The soil carrying capacity as well as so-

aluminum can be made to last longer by the application of a coat of clear lacquer three one-thousandths of an inch thick to

LACQUER AIDS ALUMINUM

No news to us!
AGATEEN 8A CLEAR has been doing it for years.

Famous for Adhesion Durability and Mileage

Agate Lacquer Mfg. Co., Inc.
Serving Industry Since 1927
11-13 43rd Road
Long Island City, N. Y.
Stillwell 4-0660-1

AGATEEN
THE LAST WORD IN QUALITY

For more data, circle 231 on colored card.

Ask About

GRAINING with plates or cylinder machines

Used for twenty-eight years by leading manufacturers for reproduction of wood grains on wood, hard-board and metal.

AMERICAN RICHWOOD PRODUCTS CO.
Graining Plate Division
104 E. Mason St. Milwaukee 2, Wis.

For more data, circle 232 on colored card.

lution stability have been greatly increased. This prevents the redeposition of soils and insolubles on the freshly cleaned surfaces, and makes for easy rinsing.

The Detrex line of electrolytic cleaners includes applications for spray cleaning, immersion cleaning, or as presoaks. Existing equipment can be used with these new cleaning processes. Detrex Chemical Industries, Inc., Box 501, Detroit 32, Mich.

For more data, circle 12 on colored card.

Truck and Aircraft Cleaning

Aluminum tank trucks, aircraft and other transportation equipment cleaning and brightening are made easy, safe and complete with DuBois' DuBrite, according to claims by The DuBois Co., Inc., 1120 W. Front St., Cincinnati 3, Ohio.

DuBrite is a new acid-brightener-cleaner for all types of aluminum transportation vehicles. It utilizes the latest chemical developments so it can remove oxidation, corrosion and other surface contaminants from all aluminum surfaces. In-use tests show that DuBrite also gives an excellent sheet flow rinse to make the completed job a luster-finished surface.

DuBrite is packaged in 30-gallon drums and is available from DuBois' four manufacturing plants in Cincinnati, Los Angeles, Dallas and E. Rutherford, N. J. DuBois maintains warehouse stock also in all principal cities.

For more data, circle 13 on colored card.

J. K. Lilley; Rinshed-Mason Co.

John K. Lilley, 46, of Spring Lake, Michigan, recently joined the sales-engineering staff of the Rinshed-Mason Co., Detroit manufacturer of automotive and industrial finishes and chemical coatings. He has been assigned to the company's western Michigan territory.

Spray Gun Improvements

Sharpe Mfg. Co., manufacturer of paint spray guns and spray equipment, has been granted patents on spray gun improvements that should prove both beneficial and of interest to all users.

Two of Sharpe's spray guns attached to cups

The patents relate to first, a new and improved manner of nozzle sealing. A conical seat arrangement is provided about the central material passage at the rearward end of the nozzle. The threads, instead of being located between the air passages for the spray tip and the main air passage, are located peripherally about both, and a simple telescopic cylindrical sliding fit is provided. Second, a design whereby a needle valve may cooperate with one or two passages for the purpose of controlling the spray tip air flow. Third, a new 2-part body structure relative to an interfitting lug and cross-slot spray nozzle.

Complete information covering designs and prices is available from Sharpe Mfg. Co., 1224 Wall St., Los Angeles, California.

For more data, circle 14 on colored card.

For Your Convenience

Use INDUSTRIAL FINISHING magazine's "Reader Service" return cards to obtain further information on products described and illustrated in the "Materials; Supplies; Equipment" section which precedes this page; also to receive further information on what manufacturers have to offer—literature, products, supplies, services, etc., as mentioned on the following pages.

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For a quick run-down on what's the latest, read all of these items about the new products, equipment and services offered by advertisers in this issue.

FINISHING

August, 1959, Issue

READER SERVICE DEPARTMENT

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Name.....*Title*.....
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Street Address.....

City.....*Zone*.....*State*.....

Decorative Paint Striper

Making painted stripes in widths from 1/32-in. to 2-in. for decorative schemes is a simple matter with the Wendell Type W paint striper. It is easy to produce clean, straight lines as well as curved and accurate parallel striping for any number of enamelled, painted or lacquered decorative effects. This striper can be used in production finishing as well as in re-finishing of equipment, furniture, bicycles, trucks, boats and numerous other items.

Straight or curved stripes in any width.

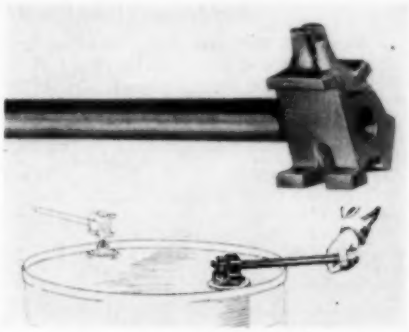
The tool is held like a fountain pen; a small interchangeable wheel actually "rolls out" the stripe of the desired width. Beveled and V-shaped wheels for striping grooves are available.

This is a sturdy precision tool of die cast construction, with finger-grip handle, a simple adjustable line gauge and paint flow regulator. It is offered by Wendell Mfg. Co., 4234 N. Lincoln Ave., Chicago 18, Illinois.

For more data, circle 15 on colored card.

A Safe Drum Plug Wrench

An improved Drum Plug Wrench which will fit over 95% of all popular bungs on the market is offered by Morse Mfg. Co., 727 W. Manlius St., East Syracuse, N. Y. The company



It is available in steel or bronze.

specializes in drum, barrel and carboy handling equipment. The wrench is available in *safety bronze* as well as special steel alloy. Seven projections and five slots conform to the various bungs making this wrench a universal tool.

Light in weight, well balanced and built for long service, this wrench is the answer to stubborn drum bungs. No more bruised knuckles, chisels, pipe wrenches, etc. A 16-in. steel tube handle gives adequate leverage to open either the ¾-in. or 2-in. bungs. The Model 61 wrench is used to remove bungs from non-volatile fluids, and the Model 61M bronze non-sparking wrench is designed for hazardous areas.

For more data, circle 16 on colored card.

An executive can't say no to all the demands of the community, but too many "extra-curricular" activities are a waste of energy. He needn't attend every meeting of every group, every board, every committee.

City..... Zone..... State.....

What Manufacturers Offer--Literature, Materials, Equipment, Supplies, Services

Please Mark Returned Cards Correctly

Some of the returned cards we receive are not filled in correctly—and we cannot read a few of the hand written names and addresses. Before returning a card, please check to see if it is marked correctly—and legibly, including your name and address. Thank you.—*Editor.*

Heavy-Duty Roller Coaters by The Black Brothers Co., Inc., Mendota 12, Ill., apply paints, lacquers, sealers, sizes, stains, waxes, fillers, base coats, etc., to wood, metal, plywood, composition board, hardwood, plastic, etc. Have speed, accuracy, cleanliness and economy. Descriptive literature available.

For more data, circle 17 on colored card.

Instant Stripper—For metal or wood finishes. A non-flammable, non-toxic stripper which removes almost instantly, most finishes—enamels, either lacquer or synthetic (baked or air dried), paints, varnishes, etc. V. J. Dolan & Co., Inc., 1830 N. Laramie Ave., Chicago 39.

For more data, circle 18 on colored card.

Restore Paint to its original consistency without opening the container, whether in ¼-pint cans or in 55-gallon drums. Time required is only 2-minutes per gallon. Full information from Miracle Paint Rejuvenator Co., 128 E. 10th St., St. Paul.

For more data, circle 19 on colored card.

Graining Plates of any pattern, size or shape (wood grain, leather, marble, fabric, etc.) for hand or machine graining. American Richwood Products Co., 104 E. Mason St., Milwaukee 2, Wis.

For more data, circle 20 on colored card.

Detrex Electrolytic Cleaners reduce rejects, reduce re-runs and increase production. There is a cleaning process for all of your cleaning needs whether zinc, steel, brass, copper or nickel. A Detrex Service Engineer can give you complete information and recommendations. Detrex Chemical Industries, Inc., Box 501, Dept. IF-759, Detroit 32, Michigan.

For more data, circle 21 on colored card.

Airless Spray Coating minimizes overspray problems, reduces health and fire-hazards, cuts maintenance and clean-up costs, saves paint, time and labor and reduces auxiliary painting equipment requirements. Above these advantages a better finished product is the final result. Write Nordson Corp., Amherst, Ohio, for the Airless Spray Painting brochure.

For more data, circle 22 on colored card.

Pre-Cut Masks speed finishing. Protect surfaces from finishing to inspection. Hundreds of shapes and sizes of masks in stock or one can be made to fit your particular needs. For use in spraying, baking and tumbling. Free samples and bulletin 160-C available from W. H. Brady Co., 733 W. Glendale Ave., Milwaukee 9, Wisconsin.

For more data, circle 23 on colored card.

"Turcoat" Low Temp Phosphating gives a durable zinc phosphate coating in two minutes at 95°F. Makes an excellent paint base and a base for corrosion prevention. Full information on Turco's new low-temperature phosphating process and Turco's phosphating reference chart are available from Turco Products, Inc., 6135 S. Central Ave., Los Angeles 1, Calif.

For more data, circle 24 on colored card.

Paint and Enamel Stripper. Requires no heat, current or additives. Handling information and samples available on a full line of non-flammable, water-rinsable compounds effective in removing coating systems of primers, topcoats, air-dry or bake, from ferrous or non-ferrous surfaces. Allied Finishing Specialities Co., 2641 W. Grand Ave., Chicago 12, Illinois.

For more data, circle 25 on colored card.

Tack Cloth for Wiping Dust. It's available in different meshes, in envelopes, rolls or bulk. Lint free, wax free; no danger of spontaneous combustion. Bond Chemical Products Co., 2641 N. Claybourn Ave., Chicago 14, Ill.

For more data, circle 26 on colored card.

Solvents and Thinners Recovered. This is a service provided by Solvents Recovery Service, Inc., Newark 2, N. J. Each customers' shipment of wash thinners, spoilt lacquers, degreasing machine sludge, etc., receives proper and separate treatment.

For more data, circle 27 on colored card.

Finer Furniture Finishing is done on a DeBurgh Conveyorized System, according to George Koch Sons, Inc., Evansville 4, Indiana, designers, engineers and builders. Work may be freely rotated on individual pallets. Saves labor, floor space, time and money. Literature available.

For more data, circle 28 on colored card.

Sanding Time Cut 38% with Lowe Vinoc, a spray material demonstrated by a Lowe Brothers finishing engineer. The company's finishing engineers help to find ways to reduce costs, they know finishes and methods, and will gladly make a "flow-chart" analysis of your finishing system, no obligation. The Lowe Brothers Company, Dayton 2, Ohio.

For more data, circle 29 on colored card.

No. 2 Process Electrostatic Hand Gun saves paint because there is no waste. Saves labor and increases production because it is faster due to the "wrap around" nature of electrospray which paints all sides of tubing, rod and wire from one side only. Saves on equipment because no spray booth is necessary; no compressed air for atomization. Write the Ransburg Electro-Coating Corp., Box 23122, Indianapolis 23, Ind., for literature and information showing how this electrostatic hand gun has been proven on different products in a variety of industrial plants.

For more data, circle 30 on colored card.

"Nacromer" Synthetic Pearl Essence adds unusual new life and brillance to most coating materials. No extra finishing equipment is needed, just incorporate Nacromer into your coating material and apply by your usual method. Can be applied to wood, metal, plastic, paper, leather and many other materials. The Mearl Corp., 41 E. 42nd St., New York 17, N. Y.

For more data, circle 31 on colored card.

Burkle Flow Coater puts a uniform film of lacquer, varnish, multi-colors, primers, polyesters, Epoxies, vinyls, etc., on the surface of the product being coated; no orange peel or trapped air results; it gives material savings up to 35%. Complete details can be obtained from Joyce Research and Development Corp., 42-42 11th St., Long Island City 1, N. Y.

For more data, circle 32 on colored card.

Multicolor One-Coat Finish called "Spex" by V. J. Dolan & Co., Inc., 1830 N. Laramie Ave., Chicago 39, Ill., provides a combination of two or more distinct contrast or harmonizing colors in on coat with standard spray equipment. For finishing wood, metal, plastic, brick, concrete and all types of composition board. Dries like lacquer. Available in a great number of attractive stock colors. Hides all surface irregularities. Color card available.

For more data, circle 33 on colored card.

Tack Rags for use prior to painting, to wipe off and hold dust and dirt particles too small to see, but which might leave a blemish on the final coat of paint or finish, are available from Ideal Chemical Co., 1499 Dean Drive, South Euclid 21, Ohio.

For more data, circle 34 on colored card.

Solvents and Chemicals for thinning materials, for cleaning and other special requirements, are available in drums or tank cars from any one or more of the companies in the group, strategically located. The Solvents & Chemicals Group, 2540 W. Flournoy St., Chicago 12.

For more data, circle 35 on colored card.

"Rock-A-Drum", the vertical drum truck picks up 55-gal. drums, rolls them over for side draining and becomes a stand on 3-in. wheels. Tilts the drum for pouring contents easily. Morse Mfg. Co., Inc., 763 W. Manlius St., East Syracuse, N. Y.

For more data, circle 36 on colored card.

Perfex Satin Finishes, the original "flat" made by a new and different process, without the use of stearates or other flattening agents, have cut the dust-free time, increased print resistance, increased body and build, improved clarity and color . . . which combine to produce a rubbed finish effect appearance and a pleasant waxed effect feel. Available in a full range of sheens to produce the exact rubbed effect and waxed feel desired. Perfection Paint & Color Co., Indianapolis 2, Indiana.

For more data, circle 37 on colored card.

Line Strainers for spray nozzle systems and related applications, keeps lines clear for efficient operation. Available in stainless steel, cast iron and brass, and in a complete range of capacities. Write for bulletin 94 which gives complete information. Spraying Systems Co., 3240 Randolph St., Bellwood, Illinois.

For more data, circle 38 on colored card.

BFC Chromic Acid (flake) is available from Better Finishes & Coatings, Inc., 268 Doremus Ave., Newark 5, N. J. Every batch is checked, and every can filled with a full weight of extra-high quality Chromic Acid. Prompt delivery from factory and nearby distributor stocks.

For more data, circle 39 on colored card.

Container Linings, Dipping Finishes, hot spray finishes, rubber coatings, tumbling finishes, etc., are just a few of the many products available from Raffi and Swanson, 100 Eames St., Wilmington, Mass. Their research and technical service can help you with your finishing problems any time, without obligation.

For more data, circle 40 on colored card.

Conveyorized Ovens can be engineered for your particular drying and baking operation problems, by the Lanly Co., 2800 Euclid Ave., Cleveland 15, Ohio. Catalog No. 560 will get you better acquainted with the Lanly organiaztion.

For more data, circle 41 on colored card.

For more data, circle 233 on colored card.

For more data, circle 234 on colored card.

Non-Grain-Raising Stains, lacquers and everything for finishing fine furniture, cabinets, pianos, etc., plus styling and technical service—in Southeast U. S. A., are available from Snyder Brothers Co., P. O. Box 631, Toccoa, Georgia.

For more data, circle 42 on colored card.

Bronze Powder can be applied by spraying, dipping or flow coating, and gives a plated effect. 33 "Cres-Lite" colors are in stock, or colors can be created to suit your needs. Color card showing our "in-stock" bronze powders is free on request. Crescent Bronze Powder Co., 118 W. Illinois St., Chicago 10, Illinois.

For more data, circle 43 on colored card.

Paint Testing Instruments and equipment take the guesswork out of paint testing. Write for descriptive catalog. Gardner Laboratory, Inc., P. O. Box 5728-FT, Bethesda 14, Md.

For more data, circle 44 on colored card.

Zinc Chromate Primer, in seven different specifications, can be shipped the same day as ordered. Randolph gives fast service and prompt delivery of uniform industrial finishing products. Randolph Products Co., Carlstadt, N. J.

For more data, circle 45 on colored card.

"Catalen" is the catalyst finish available in either gloss or satin finish. Is tough, mar-resistant and waterproof. In clear and colors. Saves on baking cost and on forced air-drying time. Consult our laboratory staff technicians for advice on any finishing problem. J. Landau & Co., Inc., Carlstadt, N. J.

For more data, circle 46 on colored card.

Exposure Test. Actual weathering, corrosion and sunlight tests, direct and under glass for quick predetermination of durability and permanency in southern Florida by South Florida Test Service, Inc., 4301 N. W. 7th St., Miami 34, Fla.

For more data, circle 47 on colored card.

"Prep" Products for Phosphating, cleaning, conversion coating, paint bonding, metal conditioning and rust removing are available from Neilson Chemical Co., 2306 Gainsboro, Detroit 20 (Ferndale), Mich. "Prep" Products are available for steel, aluminum, zinc, cadmium, etc. Write, outlining your needs, and recommendations will be made.

For more data, circle 48 on colored card.

"driQuick" Interlocking Sections for building your own controlled-temperature infrared ovens. Have no sockets to burn out, has more intense far infrared energy with less power consumption. Impervious to vibration, shock, vapor and moisture. Dry Clime Lamp Corp., driQuick Division, Greensburg, Indiana.

For more data, circle 49 on colored card.

Striping Tools make accurate striping (straight and curved) easy and fast. Two and three size stripes possible with one tool. Beugler Mfg. Co., 4312 W. Second St., Los Angeles 4, Calif.

For more data, circle 50 on colored card.

Satin Finish Wooling Lacquers are ideal for use where a satin sheen finish with a smooth, silky feel is desired, without requiring a costly rubbing operation. Available in water white or in regular satin sheen wooling lacquer. Made by The Lawrence-McFadden Co., 7430 State Rd., Philadelphia 36, Penna.

For more data, circle 51 on colored card.

Drawer-Glide Waxes, Color or colorless, penetrate deep into pores of the wood thereby giving the drawers dimensional stability, a moisture-proof coating and lubricating the surfaces for easy sliding. Drawer Glide Waxes also beautify the wood and give surfaces a smooth, waxy feel. The Prillaman Co., P. O. Box 1024, Martinsville, Virginia.

For more data, circle 52 on colored card.

Natural and Synthetic Pearl finishes in air dry or bake coatings for a variety of products, are offered by Rona Laboratories, Inc., E. 21st & E. 22nd St., Bayonne, New Jersey. Apply to metal, plastic, wood or glass surfaces.

For more data, circle 53 on colored card.

Steinemann Coater applies all finishes uniformly to practically any size or shape of product. There is no waste; unused material is recovered by a recirculating system. For additional information write Wilco Machine Works, Inc., Municipal Airport, P. O. Box 3722 Z, Memphis 14, Tennessee.

For more data, circle 54 on colored card.

Paint Strainers for straining lacquers enamels, paints or varnishes. Made of heavy paper stock with cloth inserts in coarse, medium, fine and extra fine mesh, 6-in. in diameter. Louis M. Gerson Co., Box 175A, Mattapan, Mass.

For more data, circle 55 on colored card.

Burn-in Tools for making quick and skilful repairs to nicked, dented or scratched finishes. The Op-Al Electric & Mfg. Co., 3133 Martindale Ave., Indianapolis 5, Ind.

For more data, circle 56 on colored card.

Automatic Viscosity Control for spraying flow coating and dipping improves quality of painting and finishing by providing continuous uniformity of paint material. Norcross Corp., 247 Newtonville Ave., Newton 58, Mass.

For more data, circle 57 on colored card.

Take the GUESSWORK out of PAINT TESTING

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For more data, circle 235 on colored card.

SYNTHETIC PEARL ESSENCE

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PEARLESCENT FINISHES

BAKE OR AIR DRY

For Your Product Made of Metal, Plastic, Wood or Glass, Write for sample, Specify application; choice of vehicle.

RONA LABORATORIES, INC.

East 21st and East 22nd Sts., Bayonne 2, N. J.

Plants: Maine New Jersey Canada

For more data, circle 236 on colored card.

Oven for Every Service—drying; baking; portable cabinet; batch-type or conveyorized; standard and special in design, construction and installation. Industrial Ovens, Inc., 13821 Triskett Road, Cleveland 11, Ohio.

For more data, circle 58 on colored card.

Polymerin Aluminum Siding Enamels are carefully engineered to last. Can be obtained in white or many pastel shades and have excellent color retention. Are applied by roller coat on continuous aluminum strip, baked and formed or sheared; Have excellent adhesion and flexibility. If your product must withstand long-term outdoor exposure, finish it with Polymerin Speed-Bake enamels. Interchemical Corp., 224 McWhorter St., Newark 5, N. J.

For more data, circle 59 on colored card.

Wood Grain Reproduction. New sturdy high quality machines for exacting grain reproduction—some practically automatic in operation—are offered by Schmutz Mfg. Co., 1600 W. Main St., Louisville 3, Kentucky.

For more data, circle 60 on colored card.

TOMORROW'S Products Tested TODAY

A service to aid industry in producing longer-lasting and better-looking products. Quick predetermination of durability and permanency by actual exposure test in South Florida. Write us today for full information.

SOUTH FLORIDA TEST SERVICE, INC.

EST. 1931

4301 N. W. 7th St. Miami 44, Fla.

For more data, circle 237 on colored card.

INCREASE PRODUCTION! CUT COSTS!
Your paint is factory fresh ready for use when mixed in a
MIRACLE PAINT MIXER
5 GAL. MODEL
¼ Pt. to 55 Gal. Mixers Available
Write to:
MIRACLE PAINT REJUVENATOR CO.
500 NORTH ROBERT STREET ST. PAUL 1, MINNESOTA

For more data, circle 238 on colored card.

"Pearl Glo" Synthetic Pearl Pigment can be sprayed or dipped on any sealed surface of plastic, metal, wood, leather, paper, etc. Can also be incorporated into acrylics, polyester, vinyl, etc. Gives a pearl finish at low cost. Sample available. Specify application and choice of vehicle. Argenta Products Co., Garnerville, N. Y.

For more data, circle 61 on colored card.

Complete Paint Finishing System, such as flow coating, dip coating or automatic spraying, metal cleaning and phosphatizing equipment, baking ovens, air replacement systems and conveyors can be engineered and installed by The Spra-Con Co., 3600 Elston Ave., Chicago 18, Ill. The Spra-Con catalog illustrates and describes many installations of complete paint finishing systems—small, medium and large.

For more data, circle 62 on colored card.

Cellulosic, Vinyloid, acrylic and alkyd coatings for a wide range of specialized industrial applications are among the functional finishes manufactured by Varnish Products Co., 5206 Harvard Ave., Cleveland 5, Ohio. Write for detailed information.

For more data, circle 63 on colored card.

Hi-Sol Enamel Reducer offers such merits as less "orange peel," high gloss and excellent hiding, superior flow, resistance to sagging, quick initial set, smooth finish. Potter Paint Co., Cortland 1, N. Y., and Cambridge City 1, Indiana.

For more data, circle 64 on colored card.

Dupor No. 4 Respirator has double filters for easy breathing and greatest filtration of paint spray, dust and fumes. Soft rubber face mask gives an air tight fit. Patented Dupor valves bring in clean air and throw off breathed air. Weighs only 4-oz. H. S. Cover, P. O. Box 2508, South Bend 14, Indiana.

For more data, circle 65 on colored card.

Lea Synstrip is a fast-working, non-corroding liquid stripper for removing enamel, lacquer and synthetic coatings. Will not attack aluminum, zinc or any other base metal or alloy. Does not dissolve the coating, but breaks the bond. Lea Coldstrip can be used at room temperature, with minimum ventilation and can be filtered for continued use. The Lea Mfg. Co., 16 Cherry Ave., Waterbury 20, Connecticut.

For more data, circle 66 on colored card.

Bung Type Pump solves painting bottlenecks. Eliminates messy transfer of paint from a closed end of 55-gallon drum, lets you spray unpigmented paints, primers, lacquers, etc., direct from the 2-in. end bung. Can be used for direct supply painting or for feeding up to five spray guns in a circulating system. Details available from Graco, 83 Graco Square, Minneapolis 13, Minn.

For more data, circle 67 on colored card.

"TwinWeld" Epoxy in tubes fastens anything to anything. TwinWeld uses include fastening, shaping, molding, repairing, and as an adhesive. Is quick hardening, has long pot life, foolproof measuring, no metal content and will not shrink. We pay for your first test of this material. Fybrglas Industries, 3008C Montrose, Chicago 18, Illinois.

For more data, circle 68 on colored card.

Patio Furniture has the smoothness of porcelain and wears like iron, when finished with Minnesota Paints. When applied to lacy, iron furniture this "Minnesota" paint will not rub off on clothing and prevents rust. It stays white and has a minimum of chalking. Minnesota Paints, Inc., Dept. NC-4, Minneapolis 15, Minn.

For more data, circle 69 on colored card.

Multi-Color Wood Grain Printing gives beautiful wood grain reproductions on almost any smooth, level surface. Models DH-128 and DH-158 are high-speed production type machines well suited either to standard or automated production uses. Two and three-color close-register graining machines are available from the Hamant Tool Co., Inc., 502 Warren St., Dayton 9, Ohio.

For more data, circle 70 on colored card.

Agateen 8A Clear Lacquer for aluminum is famous for its adhesion, durability and mileage. Protects aluminum indefinitely. Agate Lacquer Mfg. Co., 11-13 43rd Road, Long Island City 1, N. Y.

For more data, circle 71 on colored card.

BoGard Finishes can be formulated to meet any conditions . . . . to match any existing color . . . . or tailor-made to give you a new and exclusive color and finish all your own. We are specialists in the solving of difficult problems. Body Bros., Inc., Bedford, Ohio.

For more data, circle 72 on colored card.

Parlon Based Finishes are quick-drying, easy-sanding and colorful. They have excellent corrosion resistance, gasoline resistance and there is no necessity for a primer. Your own paint supplier can offer you the premium performance of Parlon in a formulation that meets your specific requirements, or write to Hercules Powder Co., 900 Market St., Wilmington 99, Dela.

For more data, circle 73 on colored card.

Lanly

FINISHING OVENS

THE LANLY CO.

2800 EUCLID AVE. • CLEVELAND 15, O.

WRITE FOR INFORMATION & LITERATURE

For more data, circle 239 on colored card.

WOOD GRAINING MACHINES

6-inch to 60-inch printing widths.
Models for every direct-printing application.

KENT ROTARY EQUIPMENT COMPANY

1507 So. Downey Road — **Los Angeles 23, California**
Cable: KENTRO, Los Angeles — **Phone: ANgeles 1-5632**

For more data, circle 199 on colored card.

Engraved Graining Rollers in selected wood grain patterns are available in many sizes for the panel and cabinet trade. Complete line of graining machines available. P-28-56 is the new high-speed automatic panel grain printer. Conveyorized Finishing Systems Divn., M-H Standard Corp., 513-521 Communipaw Ave., Jersey City 4, N. J.

For more data, circle 74 on colored card.

Strip Coating gives a smooth metered coating, good paint savings, is fast and economical and colors can be applied to both sides simultaneously; different colors and different finishes. Can be used for job coating, siding, awnings, seal fasteners and drapery hardware. Complete fact file on Strip Coating is available from Gasway Corp., 6463 N. Ravenswood Ave., Chicago 26, Ill.

For more data, circle 75 on colored card.

Bowles Color Drift Control System assures constant color uniformity. Ends costly color drift in product finishes, maintenance paints and packaging colors. If you face the difficulty of maintaining uniformity of color in liquid coating materials get details on the Color Drift Control System from Bowles Printing Corp., 7 Third St., San Francisco 3, Calif.

For more data, circle 76 on colored card.

FREE epoxy TUBES

We pay for your first test of brilliantly-performing TwinWeld epoxy. Fastens anything to anything. TwinWeld uses include: Fastening, shaping, molding, repairing, adhesive. Quick-hardening, long pot life, foolproof measuring, no metal content, won't shrink. Write to: Fybrglas Industries, 3008C Montrose, Chicago 18, Illinois.

For more data, circle 240 on colored card.

ENGRAVED GRAINING ROLLERS

in selected wood-grain patterns, available in many sizes for prompt delivery. Finest workmanship and longest experience in this field.

Attention—Panel and Cabinet Trade

We also manufacture a complete line of graining machines. Write or phone for information on our new high speed automatic panel grain printer model P-28-50 to H. H. Morrison, Director of Engineering.

CONVEYORIZED FINISHING SYSTEMS DIV., M-H STANDARD CORPORATION

513-521 Communipaw Ave., Jersey City 4, N.J.
Phone: Henderson 3-5834

For more data, circle 241 on colored card.

Wren Air-Brush is the new way to spray decorative or touch-up materials. Is a precision-built spray gun in miniature. Ideally suited for touching up scratches and finish imperfections or for adding decorative areas to your products. Can be used with enamels, lacquers or dyes, or any sprayable material. Air and fluid output can be adjusted; has a wide range of spray patterns. Material bottles make color changes fast and easy. Bulletin A58-1R gives complete information. Binks Mfg. Co., 3116 Carroll Ave., Chicago 12, Ill.

For more data, circle 77 on colored card.

Guardsman Furniture Finishes by Grand Rapids Varnish Corp., Grand Rapids 2, Mich., add beauty and salability to your furniture line. Two special finishes, warm sepia and antiqued white cameo, were created for the Sorbonne Group. Let a Guardsman salesman help you select the proper finish for your product.

For more data, circle 78 on colored card.

Compressors by DeVilbiss have finned intercoolers, cylinder walls, cylinder heads, aftercooler and check-valve manifold. The cooling system of a compressor makes a big difference in operating efficiency. DeVilbiss compressors with their greater finned cooling area deliver air to the tank at lower temperature with the result of less air shrinkage in the tank, less frequent running cycles and less power consumption. Catalog C-51 gives full information on compressors by The DeVilbiss Co., Toledo 1, Ohio.

For more data, circle 79 on colored card.

Patclin No. 206 Zinc Chromate Stripper, dissolves and solubilizes army, navy and air force specification coatings. Also effective on gum resins and oxidized oil coatings, baked and air dry. Does not attack aluminum, zinc or any base metal. Free data and test sample available from Patclin Chemical Co., Inc., 11-23 St. Casimir Ave., Yonkers, N. Y.

For more data, circle 80 on colored card.

Plastic Coatings and coatings for Vacuum Metallizing, are two of the many special coatings by Bee Chemical Co., Logo Division, 12933 S. Stony Island Ave., Chicago 33, Ill. Bulletin B 89 gives complete information on these coatings, and the "shirtsleeve service" offered by Bee Chemical Company.

For more data, circle 81 on colored card.

Tough Leather-like Coatings of vinyl can create profitable markets for you with wire and expanded steel products. Monsanto Chemical Co., Dept. SP-1, St. Louis 66, Mo., manufacturers a wide variety of plasticizers and Opion resins for formulators of these high-quality vinyl dispersions. Vinyl coatings can be applied by dip or spray. Finishes can be glossy, matte or even crinkled and in any color you choose. Write for source of vinyl in liquid form for coating metal, glass or wood parts and products.

For more data, circle 82 on colored card.

Hot Spray Equipment and the hot spray process give maximum solvent evaporation, uniform viscosity, better build, lower spraying pressures and up to 40% material savings. Don't judge full hot spray results by early "paint warmer" systems; arrange for an on-the-job demonstration. The Spee-Flo Co., 6614 Harrisburg, Houston 11, Texas.

For more data, circle 83 on colored card.

Industrial Finishes, specially formulated for your production line and products, give your products a salable appearance. For a perfect protective and decorative finish for your particular purpose, consult the Rockford Varnish Co., Rockford, Illinois.

For more data, circle 84 on colored card.

Grain and/or Roller Coating; flat and curved surfaces, edges, etc., with or without steady belt feed. Small and large machines. Kent Rotary Equipment Co., 257 S. Spring St., Los Angeles 12, Calif.

For more data, circle 85 on colored card.

Primer for 25 Metals, "Gripalloy" is available in black and colors; excellent adhesion . . . . and resistance to salt spray and solvents. Tenax Finishing Products Co., 390 Adams St., Newark 5, New Jersey.

For more data, circle 86 on colored card.

Baking Enamels by Adelphi Paint & Color Works, Inc., Ozone Park 17, N. Y., are formulated for your exact requirements. Adelphi's laboratory staff of expert paint chemists can formulate baking enamels that will cut your costs, and solve your finishing problems.

For more data, circle 87 on colored card.

Industrial Spray Nozzle Catalog, fully illustrated shows industrial spray nozzles, flow charts, spray patterns, spray characteristics and basic engineering data. Time-saving nozzle selection tables are also included. Write Wm. Steinen Mfg. Co., 39-47 Bruen St., Newark, N. J.

For more data, circle 88 on colored card.

The New PEARL GLO

Synthetic Pearl Pigment
SUPERIOR TO NATURAL
at the Synthetic Price

TEST PEARL GLO (new synthetic *Potented essence), whether you spray, dip or incorporate, you'll find a saving in equipment & labor required. Use it on any sealed surface, plastic, metal, wood, leather, paper, etc. It may also be incorporated into Acrylic, Polyester, Vinyl, Polyethylene, etc. Gives a dazzling pearl finish at very low cost.

WRITE TODAY FOR A TRIAL SAMPLE OF PEARL GLO for a test run and full information. Specify application & choice of vehicle.

ARGENTA PRODUCTS CO. ***(Since 1919)***
(Our 40th Year)

SYNTHETIC DIVISION	NATURAL DIVISION
Home of "PEARL GLO"	Sea St.
74-80 Forrest St.	Eastport,
Jersey City, N. J.	Maine

**Patent No. 2,807,858*

For more data, circle 242 on colored card.

OP-AL BURN-IN TOOLS and KNIVES are made of hardened tool steel especially selected for the purpose. The blades are cemented in the handles with ceramic cement to withstand high heat without coming loose from the handles, which are streamlined and well balanced for easy handling.

OP-AL THE OP-AL ELECTRIC AND MANUFACTURING COMPANY
3133 MARTINDALE AVE.
INDIANAPOLIS 5, INDIANA

For more data, circle 243 on colored card.

Add Solvent
AUTOMATICALLY
in Flow Coating, Dipping and other Finishing Processes
with NORCROSS VISCOSITY CONTROL

Provides more accurate control by eliminating human error.

Improves uniformity of coating.

Reduces labor and material costs.

Increases operating efficiency by eliminating waste.

Write for Illustrated Bulletin

NORCROSS CORPORATION

268 Newtonville Avenue
Newton 58, Mass., U.S.A.
Tel: DEcatur 2-3410

Representatives in Principal Cities and Foreign Countries

For more data, circle 244 on colored card.

with DRAWER-GLIDE

Prillaman Drawer-Glide Waxes penetrate deep into pores of the wood, thereby giving the drawers dimensional stability, a moisture-proof coating and lubricating the surfaces for easy sliding. They also beautify the wood and give surfaces a smooth, waxy feel. Supplied in color or colorless to be applied by spray, brush, sponge or dipping.

THE PRILLAMAN CO.
MARTINSVILLE, VIRGINIA

For more data, circle 245 on colored card.

Push-Button Touch-Up. With the Sprayon Self-Spraying Touch-Up Tool, any employee can quickly repair the paint damage where it happens—on the production line, inspection, shipping, warehouse, etc. Free touch-up folder available. Sprayon Products, Inc., 2071 East 65th Street, Cleveland 3, Ohio.

For more data, circle 89 on colored card.

Dulux Enamels by E. I. duPont deNemours & Co., Finishes Divn., Wilmington 98, Dela., give durability, serviceability and beauty to your products. More than 12,000 finish formulations by DuPont are serving industry today. Improvement of product and production is a DuPont function. Let a DuPont salesman or serviceman help you secure the right finish for your product.

For more data, circle 90 on colored card.

"Hammermark" Finishes are now available in colors and have the function of hiding imperfections. Are impervious to duplicating inks, cleaning and office chemicals and are mar-proof. Available in bake and air-dry and in all pearlescent colors and shades. Sample panel available. Advise your method of application. United Lacquer Mfg. Corp., Linden, N. J.

For more data, circle 91 on colored card.

"SQ Duracote" the weather-resistant finish will give 50% more resistance to film failure and loss of gloss than normal weather-resistant finishes. Your present finish can be duplicated in SQ Duracote, both in color and method of application. Contact Tousey Varnish Co., 520 W. 25th St., Chicago 16, Ill.

For more data, circle 92 on colored card.

Implement Finishes that withstand exposure and every kind of usage are just one of the many industrial finishes by the Industrial Finishes Division of Gilman Paint & Varnish Co., of Chattanooga, Tenn., serving the industrial southeast since 1910.

For more data, circle 93 on colored card.

Registers, Diffusers and Grilles, are just three of the many products that can be coated with Lilly finishes that will give beauty, performance and economy. Coatings specifically developed for electrostatic application are a specialty. Let Lilly's complete research and technical facilities help you with your finishing problems. Lilly Varnish Co., Indianapolis, Ind.

For more data, circle 94 on colored card.

Cellulose Acetate Book Free

Cellulose acetate for protective coating formulations is the subject of a 35-page illustrated brochure available from Eastman Chemical Products, Inc., subsidiary of Eastman Kodak Co.

The various types of cellulose acetate are discussed in terms of their general properties, solubility in various solvents and solvent combinations, and compatibility with plasticizers, resins, and other modifying materials. The brochure lists typical uses of cellulose acetate as a film-former in the protective and decorative coating of paper, metals, plastics, glass and fabrics; and presents detailed information on selection of particular types to meet specific application requirements.

Copies of the brochure, entitled "Eastman Cellulose Acetate" (No. E-105), may be obtained upon request to the company at Kingsport, Tennessee.

For more data, circle 95 on colored card.

Spray-On, Strip-Off Coatings

A new brochure, on the applications and economics of spray-on, strip-off coatings, has been published by the Sprayiat Corp., One Park Ave., New York City 16, N. Y.

Entitled "Sssst—Just Like That You've Ended Damage to the Finish of Your Product," the brochure stresses the advantages of strippable coatings in protecting sensitive finishes of metals, plastics, glass, rubber, ceramics, and painted or enamelled surfaces against weathering and abrasion.

The strippable film doubles as a frisket to mask irregular surfaces for painting and decoration, and to permit economical mass-production automatic spray-masking.

For more data, circle 96 on colored card.

Aluminum Finishing Manual

The Frederick Gumm Chemical Co., 538 Forest St., Kearny, N. J., manufacturer of cleaning, stripping, tumbling, etching and other materials is now offering its latest edition of the Clepo Aluminum Finishing Manual.

Many different problems concerning the finishing of aluminum are discussed as well as methods and materials for taking care of these problems. Such operations as cleaning, deburring, etching, deoxidizing, preparation for welding and anodizing are covered; also treatment of corroded stock.

For more data, circle 97 on colored card.

Diamonite Sandblast Nozzles

Features of the new Diamonite Double L Sandblast Nozzles are graphically described in a 2-color, 4-page brochure recently published by Diamonite Products Mfg. Co., Shreve, Ohio. It illustrates on the job uses of the nozzles for industrial cleaning and finishing.

For more data, circle 98 on colored card.

MORSE
VERTICAL DRUM TRUCK ROCK-A-DRUM

Picks up 55-gal. drums, rolls them over for side draining. Becomes a rugged stand on 3-in. wheels.

Morse Mfg. Co., Inc. 763 W. Manlius Street E. Syracuse, New York

For more data, circle 246 on colored card.

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Enamels • Lacquers • Primers • Vinyls • Synthetics

SEND FOR COMPLETE DATA and FREE TEST SAMPLE

LEA SYNSTRIP . . . a fast working, non-corroding liquid enamel, lacquer and synthetic coating stripper. Will not attack aluminum, zinc or any other base metal or alloy; does not dissolve the coating but breaks the bond. When heated to temperatures of 160° to 200° F., stripping synthetic coating of the alkyd, epoxy, phenolic, silicone and urea type, is accomplished in a matter of seconds.

— and —

LEA COLDSTRIP . . . high speed stripper used at room temperature; only minimum ventilation; can be filtered for continued use.

The LEA Manufacturing Co. 16 Cherry Avenue Waterbury 20, Conn.

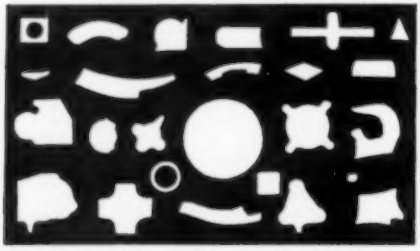
For more data, circle 200 on colored card.

Tips on Ultrasonic Cleaning

A newly published booklet, entitled, "Tips on Ultrasonic Cleaning," is being offered, without charge, by Circo Ultrasonic Corp., 51 Terminal Ave., Clark, New Jersey.

The 12-page booklet includes a simplified explanation of the basic principles of ultrasonics, a brief descritpion of the generating equipment and transducers required for ultrasonic cleaning, a discussion of proven applications, and a list of 17 of the most frequently asked questions about ultrasonics, with appropriate answers.

For more data, circle 99 on colored card.



Pre-Cut Masks Speed Finishing

Eliminates hand cutting! Brady self-sticking pre-cut Masks are die-cut to close tolerances — go on fast and accurately — protect from finishing to inspection. Hundreds of shapes and sizes in stock for immediate delivery. Distributors in over 300 principal cities.

NARROW-SLIT MASKING TAPES — For fine line masking. Precision slit to .005" tolerances. Widths from 1/64" to 1/4" — 30 yard rolls.

Write for free samples and bulletin No. 160. 40A

W. H. Brady Co.

733 W. Glendale Ave., Milwaukee 9, Wis.

For more data, circle 247 on colored card.

FINISHES CONSULTANT

It only appears impossible until it has been done.

E. A. ZAHN

4304 Alton Road, Louisville 7, Ky.

Telephone, TWinbrook 5-4349

For more data, circle 248 on colored card.

Conveyor Catalog

A 16-page catalog describes two types of conveyors. Case histories show how savings are effected by American Cable-Way conveyors, a conventional trolley system pulled by a continuous cable, driven by powered sprocket wheels. Capacities are 80, 160 and 250-lbs. per trolley.

The American chainless conveyor has eight wheeled trolleys which are connected by steel rods terminating in ball and socket joints. It has no sprocket wheels or chain, and uses an in-line caterpillar drive unit. Capacities are 100 to 400-lbs. per trolley.

To obtain a copy, write Conveyor Division. The American MonoRail Co., Fourth & Franklin Sts., Tipp City 6, Ohio.

For more data, circle 100 on colored card.

Booklet on Plastisol Coatings

Liquid polyvinyl plastics that set with heat are described in a new 16-page booklet. The material may be used by hot or cold dipping; hollow or solid casting; and knife, roller or spray coating. Typical uses include making vinyl coated metal racks, vinyl clad steel or aluminum, toys and novelties, and for covering electrical parts.

For a copy, write Bee Chemical Co., Logo Division, 12933 S. Stony Island Ave., Chicago 33, Illinois.

For more data, circle 101 on colored card.

Spray Buffing Bulletin

A new 16-page manual on automatic liquid spray buffing contains data on set-up and operating procedures for automatic buffing, burring and polishing. Ask for bulletin LIQ-600. The Lea Mfg. Co., 16 Cherry Avenue, Waterbury 20, Connecticut.

For more data, circle 102 on colored card.

Dry Dust Collector Bulletin

A bulletin which describes the characteristics and operation of the Amerclone dry centrifugal dust collector is now ready for distribution. For a copy of the bulletin, write Dept. PD, American Air Filter Co., Inc., 215 Central Ave., Louisville 8, Kentucky.

For more data, circle 103 on colored card.

Metal Cleaner Bulletin

Northwest Chemical Co., 9310 Roselawn, Detroit 4, Mich., has published a descriptive bulletin on cleaning compounds for die castings, steel, brass, copper and aluminum. Included are immersion, electrolytic and spray cleaners. Also acid addition agents, strippers, drawing compounds, aluminum cleaners and etchants, and water wash booth compounds. A copy will be sent upon request from the manufacturer.

For more data, circle 104 on colored card.

Chainveyor Corp. Appoints The Speaker Conveyor Sales Inc.

Chainveyor Corp. announces the appointment of Speaker Conveyor Sales, Inc., 315 E. Silver Spring Dr., Milwaukee, Wisc., as the exclusive distributor for Chainveyor overhead powered and power-free conveyor systems for Wisconsin.

Chainveyor Corp., maintains offices in leading cities in the United States, Canada and Mexico.

Sales Engineers; Rinshed-Mason

Larry M. Furlan, industrial finishes sales-engineer for the Rinshed-Mason Co., Inc., has been assigned to the company's northwest and central Ohio sales territory. Prior to this appointment, Furlan had been assistant to Robert C. Aiken, industrial sales manager.

John C. Eastland has joined Rinshed-Mason as industrial finishes sales engineer. He has established himself in Atlanta, Georgia, to serve the northern half of the state. Eastland has more than 20 years of industrial finishes experience.

N. W. Kelley of Southern Varnish Co., Roanoke, Va., Dies

Norman W. Kelley, president and treasurer of the Southern Varnish Co., Roanoke, Va., died in mid-July at his home in Roanoke. He was 66 years old. Mr. Kelley was active in the National Paint, Varnish & Lacquer Association. He is survived by his wife and two daughters.

"MAGIC" TACK RAGS

IMPROVE YOUR FINISH 100% ! !

"MAGIC" TACK RAGS remove specks, lint, and sand particles on the surface of metal, wood or material to be finished. "MAGIC" TACK RAGS remain tacky indefinitely, and are spontaneous combustion proof. Sample upon request.

WM. JUERGENS Mfg. Co.,

P. O. Box 143, Station C, Toledo 7, Ohio

For more data, circle 249 on colored card.

SOLVENTS RECOVERED BY

THE LOFGREN PROCESS

We Recover Your

SOLVENTS & THINNERS

From Wash Thinners - Spoilt Lacquers - Degreasing Machine Sludge, etc.

Each customer's shipment, whether one drum or a carload, receives PROPER AND SEPARATE TREATMENT. Write to:

SOLVENTS RECOVERY SERVICE, INC.
1025 Broad St., Newark 2, N. J.

OR

HAMMOND SOLVENTS RECOVERY SERVICE
241 Brunswick St., Hammond, Ind.

For more data, circle 250 on colored card.

ZINC CHROMATE STRIPPER

PATCLIN #206 DISSOLVES AND SOLUBILIZES

ARMY • NAVY • AIR FORCE SPEC. COATINGS

Lacquers, Alkyds, Gum Resins and Oxidized Oil Coatings
Baked and Air Dry

Does not attack aluminum, zinc or any base metal

Send for free data and free test sample to: PATCLIN CHEMICAL COMPANY, INC. 11-23 St. Casimir Ave., Yonkers, N. Y.

For more data, circle 201 on colored card.

CLASSIFIED ADVERTISING

The rate on ads appearing in this department is $1.00 per line of 6-pt. light face type, per insertion. Minimum charge, $5.00. Ads set in 8-pt. extra bold face type cost $2.00 per line, per insertion.

CHEMIST WANTED.

Experienced in lacquers, industrial enamels and specification work, wanted by medium size East Coast company. Should have administrative ability. Give detailed resume of training and experience, to be held in strict confidence. Address IF-689, care Industrial Finishing.

SERVICE MAN
INDUSTRIAL FINISHES.

The Tousey Varnish Company is looking for an Assistant Field Service Man with practical shop experience in paint application. Write to B. W. Alcorn, Vice President, 520 West 25th Street, Chicago 16, Illinois, stating experience and starting salary desired.

PAINT CHEMIST.

Challenging opportunity for B.S. or Ph.D. with 5 to 15 years' experience. Development, application research, and customer service work in all types of protective coatings. Some travelling. Experience in hydrocarbon, alkyd, epoxy, acrylic, and latex formulating, and emulsions of all types helpful. New, well-equipped, air-conditioned laboratory. Moving expenses paid. Excellent benefits. Send resume' to William Ittel, NEVILLE CHEMICAL COMPANY, Pittsburgh 25, Pennsylvania.

SALES MANAGER WANTED.

We are manufacturers of a complete line of industrial finishes. We enjoy an excellent reputation and are one of the larger manufacturers of lacquers and baking enamels in New England. Our interest is in an individual who is qualified to take complete control of our sales and sales staff. Salary $15,000-$20,000, depending on experience. All replies confidential. Address IF-691, care Industrial Finishing.

SALESMAN—INDUSTRIAL FINISHES

Wanted by a manufacturer of a complete line of industrial finishes for Central Pennsylvania - Baltimore - Washington, D. C. territory. Salary and commission. All replies confidential. Address IF-690, care Industrial Finishing.

EXPERIENCED FURNITURE FINISHES SALESMAN WANTED

For Georgia and Alabama territory. We are interested only in furniture finishes salesmen now covering this territory. We manufacture a complete line of furniture finishes. Please address GILMAN PAINT AND VARNISH CO., P. O. Box 1257, Chattanooga 1, Tenn. All replies will be kept strictly confidential.

PAINT SALESMAN WANTED

For the Chicago area, by a small well-rated industrial finish-on-products manufacturer. This could be an outstanding opportunity for the right man. Salary plus commission. All replies confidential. Send complete resume to GENERAL COATINGS CORPORATION, 2001 N. Mendell St., Chicago 14, Illinois.

WANTED.

Dirty solvents and thinners. Please send samples. Have clean reclaimed solvents for sale. Modern efficient solvent recovery service. Will process for customer, material at fraction of the original cost. ACME RECLAIMING, Inc., 1915 20th Ave., Rockford, Illinois.

DIRTY THINNERS AND SOLVENTS WANTED.

Send samples and letters giving approximate contents. GET CASH FOR SCRAP. THE JOHANN COMPANY, 13900 Grant St., Dolton, Illinois. Phone Dolton 4850.

WORN GRAINING ROLLS

can cost you money! We can renovate wood grains to like new condition! Or perhaps a new pattern would spice up your line? QUALITY GRAVURE SERVICE, 2016 N. Harlem Ave., Elmwood Pk., Illinois.

SALESMEN WANTED.

Ambitious salesmen for industrial finishes. We have established accounts that will form a neucleus for a good paying territory if you can offer additional business in synthetics, enamels, lacquers, basecoats, inks, specialties. Territories open in New Jersey, Connecticut, Massachusetts. Nationally-known company. Address IF-692, care Industrial Finishing.

ATTENTION: ALL FINISH SALESMEN.

If your present line does not include varnish, you are missing a bet. PERFEX VARNISHES are unexcelled (yes, unequalled) and are well known by volume finish users. Look at our display advertisement on page 19 of this magazine. If you are interested in the possibility of taking on PERFEX VARNISH in addition to your present line, write us. All replies will be held in strict confidence. PERFECTION PAINT & COLOR CO.

SALESMAN—INDUSTRIAL FINISHES.

If you are bogged down in your present position—

If you are accustomed to earnings well up in five figures (or if you feel you have that potential)—

If you see no real future with your present firm—

If you are aggressive—

If you want real security—

YOU'RE FOR US AND WE'RE FOR YOU!

Write or wire today. We're in the Newark area, well established and growing every day. Replies confidential. Address IF-652, care Industrial Finishing.

FREE TECHNICAL BULLETIN

Now available on new development in operation and maintenance of water-wash paint spray booths. Address IF-645, care Industrial Finishing.

NEED WAREHOUSE SPACE IN MIAMI, FLA.?

Modern warehouse, 6,000-sq.ft. space available in choice location. Write V. M. WHITNEY, broker, 3793 S. W. 26th Terrace, Miami 34, Florida.

FOR SALE.

Surplus—25 drums coppertone baking enamel, appliance quality. Bake 20 minutes at 300° F. or equivalent bake. $1.75 per gallon, all or part. LILLY VARNISH CO., 666 S. California St., Indianapolis 7, Indiana.

FOR SALE—ELECTRONIC COLOR MEASURING INSTRUMENT

Table model "Color Eye" Instrument Development Laboratory Serial #141. For precision color matching and measuring. Complete with voltage regulator, absolute standard, calibration lamp and spare, instruction manual and power cable. Cost new $2,450. Reasonable offers invited. ($800 minimum). SCREEN-FLOCK INDUSTRIES, INC., 5545 N. Clark St., Chicago 40, Illinois.

USED SPRAY EQUIPMENT FOR SALE.

Paasche Automatic Spray Painting Machines, with water wash booths. Three in stock—different spindle lengths, two with ovens. One unit has approximately 900 spindles and oven 31' long, 8' wide, used for coating 57 M. M. shells. Condition like new. If you need high production spray machines reasonable, let us know your requirements. We also stock—Booths, fans, paint pumps and heater, R. W. overhead conveyors, pressure tanks, etc. Check with us before buying new. Largest stock in the East. Everything guaranteed in first class condition. HOVEY SPRAY EQUIPMENT COMPANY, PHILADELPHIA, PA. GR 4-9400.

DON'T BUY ANY ONE OF THESE ITEMS

UNTIL YOU GET OUR LOW PRICES! WE CARRY A LARGE STOCK OF REBUILT USED FINISHING EQUIPMENT INCLUDING HAND OPERATED AND AUTOMATIC UNITS

SPRAY BOOTHS	CONVEYORS	PHOSPHATIZING UNITS
MIXING TANKS	FANS	CENTRIFUGAL ENAMELERS
PAINT HEATERS	OVENS	DEGREASERS
PRESSURE TANKS	LIGHTS	PUMPS, MOTORS, ETC.

GENERAL EQUIPMENT AND TRADING CO. • 2629 W. GRAND AVE., CHICAGO 12, ILL.

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Adequate Grinding Capacity

Because of its ample production facilities—adequate grinding capacity as pictured here is one example—Snyder Brothers Company can be depended upon for high quality base coats for printing and pigmented toners, and prompt handling and delivery of all orders.

FURNITURE FINISHES: Lacquers — Toners — Sealers — Glazes — Fillers — NGR Stains — Pigmented Wiping Stains and Leather Finishes.

Snyder BROTHERS COMPANY

Manufacturers **INDUSTRIAL** *of Quality* **LACQUERS**

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SYNTHETIC
PEARL ESSENCE

Nacromer adds unusual new life and incomparable brilliance to most coating materials. It makes your finish something to sell on . . . an added feature that lifts you above competition.

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THE MEARL CORP., 41 EAST 42nd ST., NEW YORK 17, N. Y.

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